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BATHING  
FOR HEALTH

EDWIN F. BOWERS M.D.

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# **BATHING FOR HEALTH**



# BATHING FOR HEALTH

A SIMPLE WAY TO  
PHYSICAL FITNESS

BY 

EDWIN F. BOWERS, M.D.

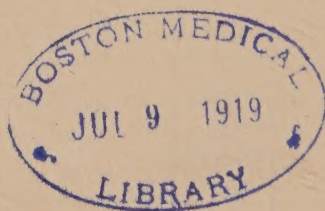
AUTHOR OF "ALCOHOL: ITS INFLUENCE ON  
MIND AND BODY," ETC.



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## INTRODUCTION

ON the shelves of the Academy of Medicine and in the New York Public Library there are several hundred thousand books on every conceivable subject — from alewife fishing and Alpine climbing to zinc poisoning and zoology. But, as yet, there is no popular, easily understood, and comprehensive book on bathing.

We have not yet been told what a bath is, how it acts, when and how often to take it, and what kind of a bath to employ for the particular things that ail us. We are not told how the bath may influence beauty, morality, digestion, or nerves, or why it has an economic as well as an esthetic value.

It is the purpose of this book to bring between two covers all that is pertinent to this subject. Mothers of families will find here many suggestions that may abort illness, or that may help those in their families who are ill. The necessity for *moderation* will be emphasized, and also the desirability of seeking medical counsel when in doubt.

## INTRODUCTION

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Hydrotherapy — the science or art of curing diseases with common wet water — will be dealt with in detail. It will be shown how inflammation, “nerves,” and many of the common disorders can be quickly and satisfactorily treated at home.

The “bads,” “spas” and mineral and hot-springs fad will receive judicial, if not ultra sympathetic attention.

Those who are addicted to the pleasing vice of Turkish or Russian baths will be enlightened as to the effects of these pernicious measures.

Bathing for Health is a book you can read for the entertaining style of its telling. And when you put it down you can be certain that some — if not a good many — pieces of helpful scientific information will stick with you.

This, at any rate, is the confident expectation and fond hope of

A.C.

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# BATHING FOR HEALTH

## CHAPTER I

### *CIVILIZATION AND THE BATH*

ONE may be dirty and moral, or saintly and foul. One may be learned and unwashed, or ignorant and immaculate. But, as a usual thing — in those portions of the temperate and torrid zones where water is comparatively free and plentiful, — these attributes are combined so rarely that their possessors are looked upon as biological freaks and weird exceptions, whose unique characteristics only emphasize the general rule.

And what applies to individuals in these zones and times applies with equal force to peoples and nations. For the height of their standing on the ladder of social evolution is, in large degree, measured by the number and variety of their baths.

Begrimed opponents of the terrible tub might allege that bathing loosens morals, as well as dirt, and promotes decadence as well as decency.

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But these results are more likely to be adventitious accompaniments, rather than the direct results of bathing — by-products of lascivious perversion, rather than effects of an innocent cause. For civilization implies sanitation, and sanitation suggests and stimulates physical cleanliness and intellectual growth. Aqueducts, a liberal water supply, and sewers, are indispensable adjuncts to community-growth and civic well-being.

This is proved by the high quality of culture and development achieved by Athens, Rome, Jerusalem, Carthage, Alexandria, and other great centres of the ancient world.

Yet the instinct or practice of cleanliness, though it implies a definite degree of culture, does not always belong to a highly civilized society, for many primitive races are enthusiastic and indefatigable bathers. These savages, however, are not to be judged by our standards of culture, for too much depends upon racial characteristics, environment, and the nearness and plentifulness of the water supply.

On the other hand, scarcity of water furnishes an adequate excuse for seldomness of bathing among many peoples. For instance, in some districts in Russia, where there are but few rivers and lakes, there are numerous

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villages, containing one hundred or more houses, where there is scarcely sufficient water available for drinking purposes. In these benighted spots baths may be said to be in the nature of an innovation. In fact, one might almost be justified in saying that they are a source of surprise of the first, second and third water. For these folk see only three of them in all their lives — after they are born, before they are married, and after they die.

And also no one could reasonably blame an Arab for not bathing in his infrequent oases, instead of religiously saving the water for drinking purposes. And, while the Arab developed a high order of civilization, actually he had to go to Cordova, in Spain, or some place where water flowed free and abundant before he could build the Alhambra, and startle the world wide-eyed with his skill and learning.

Again, a warm climate and warm water invite to the spontaneous indulgence in a practice that only the very heroic or the very foolhardy would dissipate in, if they had to chop through four feet of ice to get their matutinal tub.

Therefore the South Sea Islanders — especially the Fijians — are remarkably fond

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of bathing, and are adept swimmers, while the North American Indians — the Ojibways, in particular — know so little about the external use of water that, almost invariably, they drown if they happen to tumble out of their canoes into deep water.

In the icy waters of the Coast of Labrador, where the temperature of the water rarely rises much above the freezing point — that is, freezing to human beings — swimming is almost as uncommon as snowballing at the Delta of the Amazon.

And the Esquimo grows up, becomes an old man at forty, and dies of senility at fifty, without ever enjoying a water bath in all his blithesome career, unless sometime he should happen to be tipped over by a walrus. And then it probably wouldn't do him much good, for he might not live to enjoy it.

If civilization be measured by frequency and thoroughness of bathing, it must be conceded that women are more civilized than men. For the love of cleanliness seems to be more a part of the normal woman's makeup than it is of man's. This is perhaps more apparent among the families of laborers, miners, quarrymen, teamsters, and those engaged in rough, dirty work.

Familiarity breeds in these men a certain



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habit of uncleanness. Or they may reason that it is useless to go to so much trouble to remove that which is so readily plastered on again.

Women, on the contrary, are natural sanitationists, whose lives are dedicated to one long struggle with dirt and disorder. Which may be a wise provision of nature for the preservation of the race, the young of which so quickly succumb to the evils and illnesses engendered by uncleanness.

Generally speaking, however, it may be said that the instinct for cleanliness is inherent in man. When he has the time and the opportunity — and often when he hasn't — he improves both by taking a bath.

And this "bath instinct" is most deeply and firmly rooted. Indeed, it goes right down to our biological tap-roots. For the single-celled organisms which were our earliest ancestors originated and lived in the sea. Even now, in our present lordly state — just a little lower than the angels — nine-tenths of our body cells are aquatic, and can exist only in a saline bath. If they were to be dried, and thereby deprived of their bath of blood and serous fluid, they would promptly turn their faces to the wall and give up the ghost.

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This is probably why most normal individuals love the sea. It is the response of the myriads of particles of sea water in our tissues to the restless and ever-changing vibration of the great Mother of All Life, the source of our being, without the cleansing surge of whose tides life on this planet would soon cease to exist.

So we have much reason to love the water and to eulogize the bath. It is a tribute to our good sense and increasing intelligence as a race that this aggregate love is increasing, and that the building of bath tubs goes on apace. If we have an opportunity to continue it a few thousand years longer it may do much to carry humankind to heights of civilization as yet undreamed of.

## CHAPTER II

### *BATHING AND MORALITY*

**I**N the halcyon years of the Empire — before Rome had been drained of its best blood in wars of conquest, and before the slave and the hired mercenary fought the campaigns and battles that paved the way for the Decline — Rome built the finest and most luxuriously appointed bath houses this planet has ever seen.

In these wonderful buildings bathing was carried to the acme of esthetic perfection. It developed into an art — a nation-wide worship of the Clean Skin. To assist and amplify this idolatry the Romans included in their bathing emporiums amphitheatres, gymnasias and gardens. Also libraries, reading and lecture rooms, and courts, where all Rome could come and spend all the time it had to spend.

To gain some idea of the magnificence of these wonders of the ancient world it may be remembered that the baths of the Emperor Caracalla covered a square mile in area — one-fourth of a mile or more on each side.

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This Therma (as they called the bath) contained a great court for exercise, large halls for the various forms of baths, complete libraries at either end, a giant swimming tank, and many other useful and ornamental features. In one hall there were marble seats capable of accommodating 1800 bathers at one time — although this was excelled in the Bath of Diocletian, which provided seating facilities for 3200 bathers in one room.

! The splendor of the architecture, and the lavishness and beauty of decorations can hardly be conceived. Many of the finest surviving examples of classic sculpture — including that wonderful frozen section of agony, the Laocon — were among the ornaments of these baths, which included also some of the best specimens of the work of Phidias and Praxiteles. The Capitoline Venus, the Farnese Bull, the Hercules now in Naples, and the Dionysius owned by the British Museum, were originally a part of the decorative scheme of the Caracalla Bath.

Inside and outside these marvelous baths were embellished with pillars, mosaics, paintings, stucco work, and all the most cunning forms of decoration known to those lavish times.



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The giantism of the Romans, which led them to level a mountain to build a forum, was nowhere more evident than in these extravagant baths. The ruins, for instance, of a single room of the Bath of Diocletian, 300 feet by 90, was, centuries later, converted by Michael Angelo into a church, now one of the most beautiful and imposing structures in Rome.

And the ladies of the period enjoyed their rights, to that extent anyhow, that they were provided with bath houses, quite as gorgeously appointed, although constructed on a less stupendous scale, than those patronized by their genial lords. They, no doubt, enjoyed their protracted soakings and scrapings quite as enthusiastically as did the men.

These baths cost the patron, on an average, less than a cent of our money, and many of them, established by Emperors and rulers as a sop to cover their heinous oppression and abuse, were entirely free. In England, France, the East, and wherever Romans conquered and settled, they built public baths, the ruins of which remain, to this day, sources of wonder and interest.

Some of the empresses and the fabulously wealthy courtesans of the period preceding the Decline were given to the most extra-

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gant bathing habits. For instance, the Empress Poppaea treated herself to a daily bath in asses' milk, the lacteal fluid being furnished by a herd of 500 asses, kept for that specific purpose, and attended by an equal number of slaves. Which was going to a great deal of trouble in the attempt to secure a very inferior, unsanitary, and non-cleansing bath.

In the house of the rich all sorts of cosmetic baths were indulged in by women — and also by the Roman Beau Brummels and Alcibiades's of the period, in the effort to achieve white, soft baby skin.

The routine Roman bath was something like our modern Turkish baths, with the laconicum, or hot air room, the caldarium, or hot water bathroom, and the frigidarium, or cold bathroom. Then followed the tepidarium, a moderately heated room intended for resting — but which soon developed into a resort for loafing — and an oiling room in which all sorts of perfumed unguents were rubbed into the skin.

The cold bath and the cold plunge, with the decline of masculinity, fell gradually into disuse, the populace giving themselves over almost exclusively to the luxurious relaxation of the warm baths.

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The hot air bath was an especial favorite, and involved an extra skin-stimulating amount of oiling and rubbing, as well as much scraping and manipulating with a hook-shaped instrument called a strigal or strigillus.

The hours and days spent in the soft luxuriousness of the Roman baths, with their relaxing ease, naturally had a tendency to develop the sensuous — and from the sensuous the licentious. This was further encouraged by the custom, prevalent in the private baths of the wealthy, and practiced generally as opportunity afforded, of employing beautiful female slaves as bath attendants. The duty of these was to knead and massage the body and limbs, to shampoo, to apply unguents and perfumes, as the fancy of their luxurious masters might dictate.

Then, a little later the practice of indiscriminate communal bathing was inaugurated — men and women bathing together in absolute abandon. This rapidly led to such orgies of licentiousness and degeneration as ultimately to bring about a reaction. And so, with the advent of Christianity, the bath came under the ban, and gradually declined, until the conquering Goths and Huns cut off the aqueducts, and the fanatics closed the public baths.

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Followed centuries then, during which bathing was almost expurgated — “a thousand years without a bath,” as Michelet epitomized them, until the returning crusaders, in the Twelfth and Thirteenth Centuries, brought back to Europe the hot baths of the Orient, spreading them all over Europe, where they have been more or less in evidence ever since — although not always enjoying the best of reputations. Indeed, in England they were known as “hot houses,” a name which at last came to have the same meaning as “brothel.” Which characterization was undoubtedly the result of the mixed bathing practiced throughout Europe during the middle ages — especially on the Continent.

And, to this day, the bathing resorts of the world — from Hot Springs to Weisbaden, from Marienbad to Saratoga — are lax morally. Almost without exception “everything goes,” and the “sky is the limit.”

Warm baths also affect morality in a connection that might be classed as distinctly medical. For the feeling of relaxation they engender may have a tendency equally relaxing to physical morality.

Dr. William J. Robinson, of New York, one of our ablest and best informed writers on sexual disorders, has made the claim that



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many of his patients, both male and female, with conditions caused by, or complicated with masturbation — or self-abuse — confessed that they began this habit because of the sexually-stimulating influence of warm baths. So Dr. Robinson now makes a routine practice of warning parents against permitting these protracted warm baths to be taken by their children — unless under the supervision of an adult.

It may be conceded that those baths which tend to relax and enervate, which foster luxurious ease and the development of Sybaritical habits, may unbrace the moral armor — may favor ethical laxity, while cool or cold baths, or short, hot, stimulating baths fortify the moral, as well as the physical natures.

Yet the instinct and practice of cleanliness is inherently in the direction of moral improvement. Only its abuse — as with the abuse of eating and other salutary functions — is immoral. So, verily, cleanliness is akin to godliness.

## CHAPTER III

### *WHY MAN NEEDS THE BATH*

**P**ERHAPS there is a certain picturesqueness in dirt and squalor. Yet cleanliness, health and beauty are even more intimately related than are cleanliness and godliness, and the most difficult test for a full-blown imagination would be to conceive of Apollo or Hebe in sore need of a bath. Indeed the chap who wrote "Let me but make the songs of a country and I care not who makes their laws," might have shown even better judgment if he had said "Let me prescribe the number and character of the people's baths, and perhaps we won't need quite so many laws." Also, maybe and perchance the improved appearance of their complexions might tend to keep them more moral, as it undoubtedly would tend to keep them more healthy.

For through this great "third lung" we call the skin more than two pounds of beauty- and health-destroying waste product are excreted daily. This material, the debris of

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the organism, if retained, would kill as surely and quite as quickly as do many poisons.

In any event, the Russian boys who received the nice thick coating of gold paint became real angels in about two hours, and a similar sad fate befell the man whom certain misguided individuals attempted to gild.

Of course, we must admit that, theoretically, health seems to be compatible with abstinence from baths. For with the three million sweat glands working day and night, bringing impurities to the surface, and with the flattened surface cells of the skin falling in constant showers, there is more or less automatic cleansing of the skin. Ordinarily, we cannot "clog" these reservoirs any more readily than we could stop a bubbling spring from overflowing.

In fact, Sir Almoth Wright, Dr. Pease, and other hardy enthusiasts, basing their argument upon these facts, vociferously insist that bathing is merely a civilized superfluity — an esthetic affectation — like combing one's hair or manicuring one's finger nails, and that it robs the skin of its natural oily protection, favors its "cracking," and permits the entrance of belligerent bugs into the system.

Also that if we bathe according to Nature's method — which is merely to perspire briskly,

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and then scrape off this perspiration with a paddle, as we would from a race horse — we would do all the bathing that should be expected or required. Or, if we wanted to do an extra fine job, we could resort to a sand rub — like an Arab.

But these substitutes will never appeal very strongly to any one who has had practical experience with the regular or orthodox tub. For the dry scrape or sand bath doesn't make us feel so well nor look so well. Also we are less likely to offend our own or the other fellow's olfactory nerves by indulging unstintingly in water bathing than if we used the burlap bag for a bathroom, or the sand pile for an aquarium.

But there is another reason which these champions of "abrasive bathing" have overlooked. The fifteen to seventeen square feet of skin that cover "Us" are endowed with marvelous and intricate nervous and circulatory systems. Through their millions of nerve endings, these systems are intimately connected with the central nervous system. By means of these complicated and sensitive systems, either direct or reflex relations are made with every organ, gland, muscle or blood vessel in the body.

As a rule every organ is in relation with

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the skin immediately over it, although many organs are, in addition, in reflex relation with quite remote portions of the skin. In other words, the shock or tonic, sedative or relaxing, blood vessel dilating or blood vessel constricting, hemorrhage-checking, kidney stimulating, pain-deadening or sleep-producing action of water — used externally — is manifested because of the influence and intimate connection of the skin with the organs, nerves or blood vessels having to do with these particular functions.

And, to influence these, sometimes a very accurate knowledge of physiology is required. In fact, hydrotherapy, as it is called (the science of curing disease by various kinds of baths), is a well-known and hoary-headed branch of the healing art, with a voluminous literature, an influential following, and a good standing in communities where its character is known.

So, be it remembered — all the anti-bathers in the world to the contrary notwithstanding — that no amount of dextrous scraping with the pliant paddle, nor diligent application of the burlap bag or sand pile, will ever set the blood to tingling through the capillaries, and suffuse the body with the pink glow of health, quiet and soothe the irritable, rasp-



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ing nerves, nor relieve the tension of inflammation or congestion, as does the bath.

Also, one should be clean in order to avoid infection. If hands and finger nails are not kept clean, particularly around meal time, there is much likelihood of swallowing a flock of noxious germs. It should also be remembered that a cut or crack in the skin or mucous membrane may, if the abraded surface is dirty, or is touched by dirty hands, furnish an open door for germs. This is the reason surgeons must be so scrupulously clean. It also explains the extremely low mortality noted among Jewish rabbis as a class.

Yet the bath must be suited to the bather, as there is hardly any one thing — unless it might be eating cheese or strawberries — in which constitutions and reactions may vary as in the effects of the different kinds of baths. But this is too big a subject to consider without drawing a long breath.

It is significant, however, and slightly discouraging — in the face of all the advertising the bath has received from the medical profession — to realize that tubbing is not more popular. For, no matter what we may say to the contrary, its universal and sufficient use in so-called civilized countries is not so frequent as to wear it out.

## CHAPTER IV

### *THE BATH TUB ROUTE TO HEALTH*

**A**S a panacea for what ails us — if we don't have it too severely — there is hardly anything that excels the proper kind of a bath — properly taken. It would seem that, after the countless centuries we have spent in fussing around with this oldest of all therapeutic institutions, we should know exactly what a bath does. Also whom it does — and why. But we don't.

The majority of us usually take the word of the fellow that sits next us in the 8:14 for it. He may have inherited his ideas from his English uncle, or else he guessed at them. And because his particular pet variety of bath happens to fit him, he enthusiastically recommends it to us. We try it for a while, with the result that we may not get rid of our matutinal goose-pimples until about noon. Or we develop a feeling of lassitude and a lack of "punch." Or perhaps a loss of appetite, with irritability and nervousness, develops as a result — although we don't

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usually associate it with this — of our efforts to follow the well-meant advice of our garrulous seat-mate.

Now, tempering the wind to the shorn lamb is a kindergarten proposition compared with tempering the bath to the average bather. For the lamb merely needs to be warmed. The bather, however, may need to be cooled — if he is already too warm, and then afterwards warmed to only a normal degree of coolness.

How may we know just how cool to take a bath in order to feel warm? Or just how warm to take it to produce a sensation of coolness?

Herein the bather must be his own doctor, and minister to himself. He must gage the temperature of the bath and its duration by the *response*, the *reaction* he personally gets from it. If he fails to get this reaction, no matter how cold, cool, tepid, warm, or hot his bath may have been, the bath has been a failure in his case — if not a source of positive injury.

In designating the various baths according to their degree of heat — or lack of it — we shall, in these pages, call a cold bath one the temperature of which is between 32 and 65 degrees. A cool bath ranges from 65 to

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80; a tepid bath 80 to 92; a warm bath 92 to 98, a hot bath from 98 to 115; and a torrid bath anything hotter than this that an individual can stand without losing his hide.

The chief value of bathing lies in the exhilaration that should follow it. No matter what the rugged, red-cheeked hero who flagellates himself daily with the icy tub may say to the contrary, if such a bath leaves us shivering, chattering, blue-lipped and shrinking, with a permanent and persistent assortment of goose-pimples, which fail to thaw off for hours, the cold tub is not for us. For the reaction, the thing we should strive for, is missing.

A cold bath should not be taken when the body is exhausted, or over-fatigued by exercise, as in this condition the chances of a good brisk reaction are greatly reduced.

For the same reason a bath, especially a cold bath, should not be taken during the process of digesting a full meal. The blood is too busy with the digestive organs, and calling it away from this duty is likely to be followed by a diminished activity of these organs.

One can get practically the same reaction from the tepid, warm, or even the hot bath

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as from the cold bath. Perhaps the "kick" may not be quite so extensive, but the after-glow is equally satisfying. The blood is driven from the surfaces by the changed temperature, but it comes back more quickly, as the capillaries have not been so violently contracted. This is one of the chief functions of the bath — to arouse the latent vital energy, by inducing a definite reaction to the nerves and blood vessels; and through them to the entire system. However, warm baths frequently unbrace the nerves and invite colds. This is not the case with hot baths, taken at a temperature of 110 or 115 degrees, and sometimes even 120 or 130, such as the Japanese indulge in. Indeed, none but a Jap could endure such a parboiling. But he can and does.

And then, to cap the climax, he may emerge from his scalding tub, and walk a block or two to his house — with no more clothes on than a goldfish.

With the hot bath there is a dilatation of the surface blood vessels, and a genial feeling of warmth. This is the real pore-opening and body-cleansing bath, the one that carries away the worn-out material that otherwise might clog the three million and odd pore orifices.



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The hot bath is the only safe bath for those with heart irregularities, kidney diseases, rheumatism, and blood pressure conditions. It also relieves the "ache" of fatigue better than any other kind of bath (except the Turkish bath, which should never be indulged in by any one capable of getting up a sweat of his own), by dilating the pores, and favoring the elimination of fatigue toxins.

A tub is better, for all who can stand it, than any amount of splash, sponge, or shower baths, because in standing our internal organs hang, draped vertically from our backbone. When we lie they rest horizontally upon the backbone, or drape from it on either side.

But when we are immersed in water, the pressure on all surfaces is equalized. The lungs, spleen, liver, and other internal organs float in a water bath in entirely altered relations to one another. This relieves pressure on the heart and arteries, and gives a restful and highly beneficial gravity massage to all the internal organs.

There are not many — exclusive of invalids and those confined to their beds — who cannot, with benefit, "stand" some modification of a tub bath, taken in a warm room, as all baths, except swimming baths, should be taken.

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If, however, it is determined that the reaction to a tub bath is unfavorable, a combination of tub and douche bath may be taken in this manner — and many have found it the most effective of all varieties of bath for daily use.

Squatting in a tub in which a few inches of cold water have been run, splash the face, neck, arms and the front of the body either with the hands or with a large bath sponge. Then fill the sponge and squeeze it over the back, getting a particularly thorough action of the water over the spinal column.

Then follow with a coarse rub and five minutes of “setting up” exercises. After which the clothes may be donned, with a consciousness of duty well and truly performed.

However, if it be found that not even this variety of cold bath can be tolerated, almost equally good results, so far as reaction is concerned, and possibly better, so far as cleanliness is concerned, can be secured from the morning hot bath.

To perform this ablution according to Hygeia a few inches of hot — not warm — water is run into the tub. In this the bather must sit and splash vigorously, as with the cold splash bath, and when he feels a thorough

and genial glow pervading his ego, he resorts to the coarse towel.

The reaction from this hot bath is almost, if not quite, as exhilarating as follows the use of the cold bath.

No consideration of the subject of bathing would be complete which omitted reference to that sanitary abomination — the bath sponge. Even if each member of the family had his own particular pet sponge — which is rarely the case — these become, after a short period of use, a veritable hotbed of germs and decomposing animal matter in the form of effete particles of skin and the sebaceous secretion thrown off by the pores.

Even though the individual sponge is boiled after each using, its texture is such that it cannot be dried or aired thoroughly between immersions.

The only sponge really fit for use — except for cleaning woodwork or long haired dogs — is a wash cloth which can be thoroughly boiled and sterilized. This is sanitary and, because of its coarseness, even more desirable and cleansing than any sponge.

And each member of the family could have his own cloth, which could be monogrammed or otherwise marked so as to insure its exclusive use.

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All who are physically equal to it should be their own valets or maids. For half the benefit of a bath consists in the work of taking it, and a considerable part of the reaction and glow come from the exertion of briskly drying the body.

So much is this appreciated that certain misguided individuals even resort to a "dry rub." This they substitute for a real honest-to-goodness bath, just because the friction with the coarse towel makes them feel as though they really had taken a bath.

For invalids and those confined to their beds it is best not to attempt to bathe the entire body at one time. Sponge the body in three or four installments instead, drying each part before proceeding to the next. To insure against any unfavorable reaction the body may then be sponged with alcohol, which assists perspiration by promoting a more rapid evaporation from the surfaces. This, it may be noted, is the only possible way in which alcohol is of any value in sickness — or health either, for that matter.

The use of liberal latherings of soap in a daily bath is hardly necessary, unless one's occupation is such that he has accumulated much dirt and grime during the working day. For soap tends to remove too much of the

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natural oily protection from the skin, and causes thereby cracking of that beautiful and elastic protecting covering.

For a brisk tonic to the nervous and circulatory system a sharp spray of cold water, played briskly up and down the spinal column, followed by vigorous rubbing with a coarse towel, is excellent.

It has been noted that those who bathe frequently, and are cleanly in all their habits, are usually moral and virtuous. This is probably true, for most generally your criminal is a sick man. And one of the surest ways of curing a sick man is to remove from his system the perilous stuff that makes him sick.

So bathing is much more than a process which merely makes us prettier to look at, and more wholesome to live with. For it has a definite therapeutic value. It is "big medicine," in the biggest and broadest sense of the term.

The Fathers of Medicine knew their business when they made bathing a regular system of medical treatment. And we, their stumbling sons, are only just beginning to realize that, after all, our daddies may have had much more good sense than we have previously given them credit for having.



## CHAPTER V

### *BATHS AS "BIG MEDICINE"*

**I**F the medical profession is ever called upon to answer for its sins of omission one of the first questions it will have to answer will be "Why have you, for almost twenty centuries, neglected to use water as a therapeutic agent?"

It seems almost incredible that the rich experience of the ancients concerning the health-giving properties of the bath should, until the latter half of the nineteenth century, have been generally ignored.

Perhaps the "Dark Ages" — so called because of the dirt and ignorance that infested them — affected the medical profession more virulently than it did any other.

But the fact remains that scores of thousands of human beings must have been permitted through all these centuries to die the death, when a tub of cold water, or a properly given sponge bath, might have saved their lives — for a time, anyhow.

And so now we have remembered what the old Greeks told us, and what common sense

## BATHS AS "BIG MEDICINE"

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should never have permitted us to forget — that cold water on the outside of a man is good for hot blood on the inside of the man.

Of course, there is occasionally danger in plunging a hot patient into a cold tub, but there is also danger in eating olives, picking chickens, or going to church.

In most cases, however, a little attention to symptoms indicating collapse will obviate any evil results. And when this collapse is feared as a consequence of "tubbing," a cool sponge will act as a fair substitute — especially if it is repeated often enough.

The usual method of employing the bath in fevers, and the one attended with the least shock, is to immerse the patient in a full tub at a temperature of ninety degrees, and then run cold water in and hot water out over a period of twenty minutes, or less, until the bath temperature is reduced to sixty-five or even sixty degrees. In this way the temperature of the patient may frequently be brought down — for a time — three or four degrees.

Naturally, much comfort is afforded by this reduction in temperature, to say nothing of the conservation of energy, the relief of delirium, promotion of skin and kidney activity, and possibly the destruction of

## BATHING FOR HEALTH

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myriads of bacteria in the blood stream, which cannot survive the exposure to this low temperature.

Of course, cold baths do not *cure* fever. For the cure is brought about by the development, within the system, of anti-bodies and toxins that kill the germs that cause the fever, and also by the increase in the numbers and in the appetite of the leucocytes, or white corpuscles (the little policemen of the blood), that devour the noxious germs. But the baths *do* relieve the febrile symptoms, and help bring about normal physiological functioning.

Cold bathing is of great value in diseases other than fever. In nervous affections, especially the functional conditions, as hysteria, St. Vitus' dance, or hysterio-epilepsy (petit mal), a cold tub is a regular ne plus ultra of a curative agent — especially when followed by a brisk, blood-whipping rub with a coarse towel.

Rickets and malnutrition in children are frequently benefited by short cold baths. Much care, however, must be observed here, as in other enfeebled conditions. For the shock of cold puts a strain upon the heart that may occasionally produce dilatation of that organ. So, unless advised by a physi-

cian, treatment of these cases should not be attempted.

Hot baths are powerful stimulants to the circulatory system, and have an excellent effect in suppressed menstruation, as well as in hemorrhoids. They are especially valuable in the relief of swollen joints, gout, stiffness and soreness from any cause, or in the thickenings that sometimes occur as a result of wounds or injuries. Also, the hot bath will frequently cut short the cold stage in chills and fevers.

If a hot foot bath be given as a means of stimulating a sweat, it is well to cover the patient with a blanket, and give copious quantities of hot water or hot lemonade. A cool compress should be wound around the head or the neck to prevent congestion in the blood vessels of the head.

Fomentations applied to the spine stimulate the action of the foot bath, and after sweating is well established it will usually be continued by placing the patient in bed and carefully wrapping him in blankets.

The foot bath should accomplish its purpose, which is to draw the blood from the great abdominal vessels, and stimulate it to circulate freely.

It might be emphasized that much care

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should be taken to protect from drafts and sudden chillings following this foot-soak, by putting the threatened one to bed immediately, and by keeping him there until the storm blows over.

Also in rheumatic affections — particularly muscular rheumatism, neuralgia, sciatica and lumbago — protracted hot baths, good, long “soaks” of a half an hour or an hour, repeated several times daily, have given excellent results.

In Bright’s disease warm baths, by keeping the pores thoroughly open and thereby relieving the work of elimination done by the kidneys, are almost indispensable. And this is true also of diabetes, although here, in addition, the regulation of the diet is of great importance.

In diseases of the skin warm baths are of great service. For psoriasis, particularly, a thorough immersion in hot water effects a removal of the scales from the body, although this has no permanent curative influence upon the disease. In fact, we do not definitely know anything that has.

In acne, chloasma and other skin eruptions caused, in fact, by lack of cleanliness, a liberal application of warm water, soap and elbow grease has worked miracles.

And yet, in our enthusiasm for baths as "big medicine" we must not forget that in many skin diseases the worst thing we could possibly do to these patients is to bathe them.

Professor Hebra, of Vienna, one of the world's greatest authorities on skin diseases, is very decided upon this point.

In fact, he contends that certain eruptions are so easily aggravated by water that even a wetting in a shower has been known to bring about an exacerbation of the skin condition in many peculiarly susceptible patients. But this is a technical medical question, and is hardly within the scope of this inquiry.

It is interesting to note, however, that Hebra, in spite of his antagonism to baths in certain conditions, has broken the record for subjecting patients to the extensive and continuous use of warm water. In the treatment of many cases of scaly and itching diseases he prescribed two hours daily immersion in a warm bath, which, after a period, he increased to two days at a time, and then, in a number of cases, extended the duration of the bath from one to nine months. Dr. Hebra claims that the patients derive great benefit from this champion long-period bath-



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ing, and that it is no trouble for them to eat, drink or sleep in these baths. And also that nutrition, respiration and skin excretion go on just as though they were living in an atmospheric instead of an aquatic medium.

One homely, and generally known, use for baths is to employ them in conditions resulting from exposure, either alone, or in combination with other measures. For instance, in breaking up a beginning "cold" — which, by the way, is most generally due to lowered vitality, plus a defect in the circulation caused by local chilling and one or more varieties of "bug" — nothing is more effective than a brisk cathartic, a good, liberal flushing of the system with water, or water in the form of hot lemonade, and a hot bath. This should be taken hot enough and long enough to equalize the circulation, and stimulate the flow of stagnant surface blood back to the furnace where its impurities are burnt up — in the lungs.

This bath is, of course, best taken immediately before bed time, and if a little gentle sweating — Nature's way of giving us a bath — can be induced, so much the better.

Indeed, we are so largely aqueous in our physical makeup — being composed of sixty-

six per cent of water, which enters into every tissue, even to the bones and hair — that possibly the question of vibrational and chemical affinity may also enter into and help explain the splendid results of water therapeutics. But, though intensely interesting from a medical and philosophic standpoint, this is no place to discuss such an involved subject.

## CHAPTER VI

### *COLD BATHS AND COMMON SENSE*

ONE may abuse even the best thing in the world. Take the much-vaunted and justly-dreaded cold bath, for example. Now, the chief advantage of a cold bath over the ordinary or bathroom variety of bath is that it demonstrates either an indomitable will or a superabundant vitality and recuperative power. Yet, one of the axioms of medical science is that "there is no action without reaction." And upon whether the reaction is beneficial or not depends the value of the cold matutinal tub. Here is where we should temper the bath to the chattering bather, and lay down the broad, general principle that unless it stimulates, unless this brisk reaction follows, this bath has been a positive injury.

If, after a bracing plunge in the icy water and a skin-reddening bout with a coarse towel, there is developed a genial feeling of exhilaration and a fine, wholesome glow, the cold bath is health-giving—provided that it doesn't produce rheumatism and stiffness.

## COLD BATHS AND COMMON SENSE

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If one is young — and remember that many are younger at sixty than others are at sixteen — and his vigorous heart is excited to force back into the capillaries and surface vessels the blood which the cold shock forced out of them, and if the increased activity of the circulatory system makes the blood flow more freely and the body glow more warmly, the bath is beneficial.

It is then a better tonic and appetizer than anything one could drink out of a bottle or take in a pill, and it may be kept up for years, and produce nothing but good results.

But if we find, as many do, after even twenty years of morning cold tubs “just as they flowed from the faucet,” that we seem to have more stiffness in the spine, with little twinges of lumbago, or an extra susceptibility to drafts or colds, it were better to “cut them out.” If we don’t, they may cut us out — by the high blood pressure, hardened artery, and kidney route.

In point of fact, even the average healthy man or woman, after fifty, has usually lost such an amount of blood vessel elasticity as to make the practice of cold bathing dangerous — for the shock of sudden cold affects the heart and arteries exactly as does muscular overstrain. And no man, more than fifty,

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as we all concede, has a moral right to gallop up the elevated stairs, or bring in his own home runs.

Again, if the "cold dip" is taken, not because the full-blooded body exults in the caress of the tingling water, but because the family expects the hero or heroine to perform, the bath will probably do no good, and may do much harm.

An athlete might plunge into a tub of ice-water in a bathroom a few degrees above the freezing point, and after a brisk rub, glow with almost superabundant warmth. An anemic, delicate woman, on the contrary, as a result of this ice-thong flagellation, might sustain a nervous shock that would leave her in an ecstasy of misery for hours. And so the vigorous-hearted man or woman may derive a tonic influence from a cold plunge which would produce nothing but loss of appetite, discomfort and cold feet upon one less resilient.

If this shock results the rigor of the temperature should be abated. If the "reaction" consists in a livid face, blue lips and chattering teeth, a fit of shivering, and a large assortment of wrinkles, the cold bath has proved itself not only harmful, but perhaps an actual source of danger.

## COLD BATHS AND COMMON SENSE

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For when the blood is driven from the surface by the chill impact, and the vaso-motor nervous system, heart, and arteries lack the "punch" to drive it back again, an added weight or overstrain is placed upon the great internal blood vessels which may, by over-dilation, weaken them permanently.

When delicate nerves are lashed by the cruel whip of cold, and the warm, rich blood fails to rush back to calm them and to provide extra nutriment to repair their waste, it means that sooner or later — if the practice is persisted in — this cold bath enthusiast is going to go nervously bankrupt.

The business man who finds himself "snapping" at his clerks, the workman who catches himself twitching and "jumping," — with that peculiar, sudden jump that starts from nowhere in particular and ends in the same place — the mother who "gets out of patience" on the slightest provocation, or on no provocation at all — all these may be suffering merely from chronic cold-bathitis.

But, granting that none of these symptoms obtrude themselves, the sudden chilling of the surface and the blood remaining in the surface blood vessels may throw out of solution a portion of the overload of uric acid that the blood frequently carries, even in



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healthy individuals, depositing it, in the form of sharp crystals, in the muscular tissues or in the joints.

Those afflicted with kidney trouble would do well completely to avoid the cold bath. But for those sub-vital individuals, likely to be much benefited if toleration to cold baths could be established, it might be advisable to attempt the development of resistance.

This can usually be brought about by first practicing sponge bathing. Standing in about a foot or less of cold water, rub the body briskly with a coarse wash cloth or towel wrung out of water at a temperature of about 80 degrees Fahrenheit. Reduce this temperature day by day (and always with a thermometer to guide) until the water is down to 50 degrees.

If this is well borne, and if a good reaction follows, the cold douche or affusion (water quickly dashed from a pitcher) may now be tried.

Beginning as before at 80 degrees, reduce each day the temperature of the douche, until 50 degrees is reached.

By this time — or some time before — either a tolerance for the tub will have been established, or the experiment will have been abandoned in disgust.

## COLD BATHS AND COMMON SENSE

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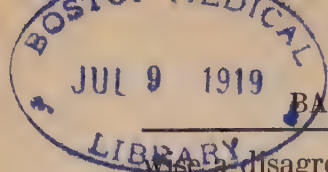
Also, it may be of interest here to note that special bathing facilities are not always necessary in order to give a patient suffering from typhoid or from some other fever a full tub bath. In fact, this bath may actually be given while he is recumbent in bed.

It merely requires that a rubber sheet be placed under him. And any one with a little of the technic and dexterity of the trained nurse can readily do this, without disturbing the patient greatly or lifting him out of bed.

By placing rolls of blankets under them the edges of the rubber sheet can then be raised, the patient lying in the depressed portion.

Then the bed can be filled with water, and kept at the desired temperature during the duration of the bath, either by ice, or by repeated renewal of the supply.

In this position a spray bath can also be given, water being squeezed from a sponge and dropped from a height of a few feet. It is always advisable to apply cold compresses to the head before administering bed-tub baths, otherwise dangerous head congestions may be produced. When giving a cold bed-bath for its refreshing effect it is always well to apply gentle friction to stimulate the action of the skin, and assist the circulation. Other-



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is a disagreeable "clamminess" and a poor reaction to shock may result.

However, this is usually overcome by administering an alcohol "rub" following the bath.

It is quite true that the daily cold plunge is one of the finest forms of health insurance ever devised, a regular gilt-edged "toughener" — provided one is tough enough to stand it.

If one derives increased vitality from it rest assured that it stimulates a truly wholesome, natural and desirable form of vitality. And remember that anything that increases vitality, or makes us healthier, also tends to make us handsomer, better natured, more charitably disposed, and more patriotic.

But if it does not stimulate and increase our store of vigor, it might be prudent, and at the same time demonstrate a display of most excellent judgment, were we to substitute common sense for mere courage in regulating the temperature of our morning tub.

## CHAPTER VII

### *BATHING FOR BEAUTY*

**T**HERE is no side-stepping the proposition that to be beautiful we must first be healthy. So we must score one for the cold bath in respect to the fact that it will make us healthy — provided that it doesn't kill or cripple us first.

But the cold bath has another disadvantage. It lacks cleansing and beautifying properties. No one but an Englishman — who doesn't know much about bathing, anyhow — for statistics prove him far down the bath-frequency line in comparison with other civilized races — believes that the last word has been said to the skin when we have treated it to a quick dip in ice water.

Nor has it. For it requires that the water be heated to a point where it will dissolve off the accumulated oil and the "matter out of place" that adheres to the oil film before real cleanliness is attained.

And fear not to destroy the oil-secreting power of the skin by occasionally freeing it

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from this film. For the internal force that pushes oil, sebaceous secretion and effete material up through those glands will continue to push. Yet, of course, no self-respecting skin could stand a perpetual soaking in hot water without showing signs of losing too much of its lubricant — and becoming roughened, chapped and fissured.

In contradistinction to the tonic shock of the cold tub or shower, warm and hot baths quiet and soothe. They relax the tension of muscles, nerves and blood vessels. They help the skin to eliminate the accumulated fatigue poisons that depress vitality. In short, they tend to make us healthier — and, as a consequence, handsomer.

However, hot baths, especially if too long-continued, are debilitating. And anything that filches strength robs beauty. Yet, if one does not remain in the hot bath longer than two minutes at a time, he gets almost as much stimulation, followed by quite as good a reaction, as he would from a cold bath.

The cleansing bath should be from 90 to 95 degrees Fahrenheit. This should be followed by a colder splash or a shower which drives the blood from the surface and closes the pores. Great care should be observed

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to insure the thorough rinsing off of the soap — for even the purest and blandest of soap is irritating if permitted to remain long in contact with a delicate skin, and merely wiping off a lather is not getting rid of all the soap — by a considerable margin of failure.

The towel should invariably be tempered to the skin. If one is blessed with a tough integument a coarse crash towel may be used briskly. But if she or he happens to have a thin tender skin the “crashness” of the towel will have to be modified.

Many believe that the tepid bath, finally graduated to coolness by the simple process of letting in cold water as the warm water runs out, is the best bath. But this is “*chacun à son gout*,” as the old lady said when she kissed the cow. Probably the best all-around average temperature for the bath is from 68 to 72 degrees, although this varies with the individual reaction. It is best, to insure accuracy, that the temperature be taken with a thermometer, as the old nurse’s principle of determining the eternal fitness of things is eminently unsatisfactory. Her practice, you remember, was to put the baby in the bath, and if he turned blue she knew the water was too cold. While if he turned red she was equally certain that it was too hot.



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Delicate children and women might react most unfavorably to a bath the temperature of which is gaged in this rule-of-thumb manner.

Once a day is about the correct amount of indulgence for the average bather. In the summer an extra cold tub might be taken with benefit. But if the skin feels dry, scaly, or itchy after the baths it may be well to cut down their frequency — especially during cold weather and the season of “winter itch.”

Sea bathing is one of the greatest and most effective of all healthifiers and beautifiers. Partly from the salt contained in the water, and partly from the “slap” of the surf, it is splendidly stimulating to the skin nerves, and through them to the entire system, particularly if the skin can tolerate dispensing with a fresh water shower after the salt bath.

The same objections, however, apply to its abuse by emaciated, weak, or anemic individuals as applies to the morning cold tub, and for identically the same reasons — only more so.

Those famous ladies of history who bathed in asses' milk, wine, strawberry or elderflower juice, chickweed, and various other delectable products, accomplished a three-fold purpose

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by their bizarre baths. They amused themselves, they got indifferently clean, and they gave their imaginations a copious amount of gentle exercise.

Had they, however, depended upon cistern or rainwater — which is the purest and softest water procurable anywhere — they would have been much more clean — even though not quite so picturesque or well advertised.

“Hard” water — which is water carrying an excess of lime or other minerals — is sometimes most irritating, especially to delicate skins. A wine glassful of common vinegar will neutralize the excessive alkalinity and thereby “soften” the water, so that it becomes a better dirt solvent; which treatment also overcomes the tendency towards irritation.

Exercise before and after bathing aids in the good effects of the bath, for it opens the pores and facilitates the expulsion of waste products, and after the bath favors the nutrition of the skin by increasing the reaction of blood to the surface.

While there are some skin diseases that are aggravated by bathing, most eruptions — as pimples, pustules, scales, and crusts — are greatly benefited by hot or warm baths — particularly if some antiseptic, as chinol, lysol,

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or some of the mercury preparations be added.

Sometimes a half pound of starch, dissolved in the bath water, has an excellent effect upon itching and eruptions, and every one who has ever had them knows that hives are greatly relieved by immersion in salt water.

For those who perspire too freely a half a cupful of ammonia and a little formaldehyde is most helpful, and frequently curative.

A wine glassful of toilet ammonia also frequently has an excellent cleansing and whitening effect, and is usually very well borne by even the most delicate skin. Or a little tincture of benzoin may be equally acceptable.

Many famous beauties, instead of using soap, use almond meal poured into the wet hands, thereby forming a paste, which is rubbed on the hands and face as a soap substitute. It seems to agree with them, and certainly it is bland and non-irritating, being free from alkali.

Oatmeal or bran — either dissolved in the water, or sewn in a bag and soaked in the water — often have a soothing and softening effect upon roughened or stained skins.

Upon the choice of a soap depends much of the success of bathing for beauty. If a

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soap has an excess of alkali — and most of them do — this alkali promptly unites with the delicate fatty substance secreted for the protection of the skin, and removes it, leaving the skin surface dry and harsh. Cracks then form in the skin, and dirt works into them, frequently requiring the use of even stronger soap to eradicate. This still further deepens the cracks, and so it goes, from bad to worse.

Don't economize on toilet soap. Adopt the principle that even the best is not quite good enough, although it will have to do, until a better is perfected.

If the skin is unduly sensitive to soap it might be well to shave a little of the least irritating toilet soap one can secure, and let it dissolve in the bath water ten or fifteen minutes before the ablution. Thus any irritant which the soap might contain would be so diluted and diffused that only a very small amount of it at a time could touch the skin.

Stiff scrubbing brushes, bath mitts, coarse sponges, and other implements for separating dirt and skin by the Scotch law of navigation — which consists in main strength and stupidity — should be used only for manicuring the kitchen floor, or polishing off the picture frames. And even then they should not be

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used too recklessly. To employ them, however, on the delicate human skin is sure evidence that one hates herself.

To use the dry heat of the Turkish bath or the moist heat of the Russian bath for increasing the total stock of beauty is love's labor lost. Indeed, unless they cause free and profuse perspiration these baths should be avoided — especially if followed by a headache or any feeling of discomfort. They are, at best, but a lazy way of taking physical exercise, and we should be just as well off if we'd let the Russians and the Turks have our share of them — as well as their own.

Nothing in the Pandora box of Beauty is more important than the bath, for it is a goodly segment of a beneficent circle. Baths favor health, health creates beauty, beauty invites happiness, and happiness in turn develops more beauty. If you haven't already got the habit, get it.

## CHAPTER VIII

### *SMOOTHING RAGGED NERVE EDGES*

**I**N the dozen or dozen and a half feet of skin that wrap up our marvelous body mechanism there are many millions of nerve ends, each connected by tiny tendrils with larger nerves, which in turn flow back into the great trunk lines — great, grey bundles of nervous tissue as thick as a young clothesline.

Every organ, every smallest particle of our structure, is crossed and recrossed by this intricate telegraphic network — this marvelous impulse-gathering, message-bearing and muscle-stimulating system that is barometer, activator, and index all in one.

Through nervous influence muscles contract or extend, glands discharge their secretions or else hoard them up — and excessive zeal in either direction spells distress, or even disaster — and every function in the body is either accelerated or retarded.

Now, we have been taught for many centuries that this wonderful nervous organism of ours is influenced by various drugs taken



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through the stomach. But it remained for the past few decades to re-educate the world concerning the powerful influence of water upon the nervous system, and through this influence favorably to affect the general system.

This influence is particularly marked in diseases affecting the nerves themselves — especially where the condition is one of over-stimulation, excitability, or irritability.

So now we know that the warm bath — say a few degrees above body heat — is one of the most effective sedatives we possess. Indeed, it has almost entirely replaced the use of hypnotics and quieting drugs in those places where sedatives are most indispensable — in our asylums and sanitariums.

Violent, dangerous maniacs, instead of being doped or straight-jacketed, as in the early bad old days, are now immersed in a nice warm bath of a uniform temperature — a “neutral” bath, as it is called — and left there, with their heads supported on a strap saddle or a rubber pillow. Here they remain for hours, or even days, at a time, even sleeping and eating in the tub.

This immersion in the warm water quiets and soothes them as nothing known to medicine has ever done, first by the direct action

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exerted upon the nervous system through the millions of nerve endings, and secondly by removing, through their skin glands, a highly poisonous depressant. For some authorities claim to have noticed a distinct yellowish tinge in the bath water of these maniacs, the action of which, they claim, must have stimulated the emotional outbreak, but this is not definitely accepted. The product exuded is probably some combination of organic alkaloids, developed by the putrefactive processes within the body.

However, modern "rest cure" institutes, and many physicians in private practice have taken a leaf from these asylum experiences, and are prescribing long warm baths for their patients suffering with nervous irritability, insomnia, hysteria, nervous dyspepsia, functional irregularities peculiar to women, or any painful affliction — particularly if it be of an inflammatory nature, as neuritis, neuralgia or sciatica.

Sleep which is brought about while in the neutral bath is said to be far more restful than any other variety of the Drowsy God's stock in trade. In fact, many of those who have had this experience claim that three hours' sleep in the bath tub is easily equivalent to six hours' sleep in bed. One physician,

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who makes a frequent practice of treating himself to protracted neutral baths for insomnia, emphasizes this fact by declaring that he "sleeps faster in the bath than in bed."

It must be remembered, in indulging in bath-tub sleep, that the stomach should be practically empty. Otherwise, much harm may result. This follows as a consequence of the changed character of the circulation which is quite likely to be brought about.

Those indulging in the protracted warm bath should be able to assume an absolutely relaxed position. Also they should not attempt to read, or do anything which might place much of a task upon the brain or the nervous system.

In many sanitariums, however, it has been found advisable to have the nurse read from some rather unemotional story — as a means of furthering the degree of relaxation — particularly with insomniacs — who may be said to be actual victims of an hallucination.

One of the worst features of insomnia is that, when it becomes an acute mental disease, it involves the victim in a firm conviction that natural, restful sleep is no longer possible for him. The neutral bath, by bringing about refreshing sleep, "breaks up" the

## SMOOTHING RAGGED NERVE EDGES

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habit of wakefulness, and overcomes the obsession.

Due care, of course, must be observed to avoid any depression from these baths, as in this event they do infinitely more harm than good. The condition of the pulse, and the "feelings" of the patient himself are the best guides in this matter.

In recent years the warm bath has also been employed with excellent success in treating "temper" in children. The youngsters are much more irritable and restless at night, following a long strenuous day of play. Their nerves are keyed up to concert pitch, and will not relax, partly on account of the tension under which they have been working, and partly because the nerve centres are irritated and poisoned by fatigue toxins. Sometimes many hours elapse before, in the ordinary course of functioning, these poisons are consumed by oxidation — burnt up by the oxygen taken into the system through the lungs.

Therefore, doctors are now recommending that mothers, instead of scolding — which only increases nerve irritability — or instead of cajoling — which merely increases their own irritability — give the little tads a nice warm bath — leaving them in the tub to

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“soak” for an hour — unless they should happen to fall asleep sooner.

It is always best to leave the child to paddle around alone in the tub — until he becomes drowsy, after which he should be removed and *patted* dry (never “rubbed,” because this excites a reaction that should be avoided) and then put to bed, with a quiet, soothing word. Try this with your fretful child, and see if it isn’t a better sedative than scoldings or entreaties.

This sedative bath should be just a few degrees above body temperature, and maintained at this point by permitting a trickle of hot water to run in during the time the child is in the tub.

Indeed, it is highly probable that if the nerves of all sudden-tempered individuals — men, women and children — could only be soothed with an hour in a neutral bath, there would be infinitely less friction in life.

Existence would be calmer and more tranquil. Lightning flashes of passion, that sear and destroy, might be mitigated or prevented. It is even quite likely this peace-ripping discharge could, by the long warm bath, be conducted safely down the bath tub waste pipe — where it would vanish forever, with a little chuckling gurgle.

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Perhaps it might be well for the agitated housekeeper to try this the next time the cook scorches the pudding, or spills the beans.

Also, the next time the stenographer forgets the enclosures, or the 3:30 appointment is cancelled without notification, instead of kicking the cat and snapping at the children when you get home, hie yourself to the bathroom, and read the evening paper clear through — ads and all — while lying covered to the chin in tepid water.

It might be well to explain to the presiding genius of the household why, in the interest of all concerned, you had better be left alone in your bathroom glory rather than harangued with pressing invitation to "hurry down to dinner."

Otherwise the seat of war may only be transferred from the office to the household, and the last state might be worse than the first. Which would have a most soothing effect upon the ragged nerve edges — just like a rasp.

So water on the outside is sometimes much better than medicine on the inside. In any event, it certainly cannot involve any great risk to try it out.



## CHAPTER IX

### *SEA AND SURF BATHING*

**B**ATHS are taken for many reasons in addition to the laudable and praiseworthy desire for cleanliness. We bathe during the torrid season to open the pores of the skin and regulate our temperature, thereby refreshing and cooling the body.

We ablute for the purpose of strengthening and invigorating the system, to overcome fatigue and make the muscles more pliable, to develop a resistance to extremes of temperature and promote a higher degree of endurance, and also for the sake of the physical exercise, as in swimming.

This, indeed, is the chiefest charm of sea bathing, one of the finest and most helpful of all baths.

Sea water, which is usually of a specific gravity of 1026 — fresh water being standard at 1000 — because of the salts and chemicals held in solution, has a much greater tonic effect than fresh water. This is exerted through the skin and nerve endings, and through them through the entire body.

## SEA AND SURF BATHING

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The reasons why these salts and chemicals are stimulating would carry us far into the domain of physics and magnetic energy. Suffice to state that the tonic advantages of sea water are indisputably established.

It may, however, interest us to know of what Old Ocean is composed. Sea water, in addition to chloride of sodium, or common salt, contains sulphate of potassium, sulphate of magnesium, traces of bromine, iodine, and various other salts. These minerals have an appreciable influence on the temperature of sea water, which is usually higher than that of fresh. For the heat of the solar rays is felt not merely on the surface but, because of the admixture of salts, penetrates the mass of water to a greater depth.

It is a common, but mistaken idea, that there is no danger of "taking cold" after bathing in sea water, or from the mist or spray which may "carry in" on the wings of an ocean breeze. The stimulating influence of the salt does prevent, in some degree, the chilling of the skin, and the shock which drives into the large blood vessels of the chest and abdomen the blood from the surface capillaries.

But this holds good only in a measure. For imprudent exposure at the "shore" may

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be followed by the same disagreeable results as follow wetting with any other kind of water.

It is quite possible, however, that colds contracted at the sea shore run a shorter course than colds which are acquired at fresh water resorts. But this is due to the influence of the pure, bracing air, and the tonic effects of the vacation season, and not to any inherent attribute of the salt water itself.

This suggests that those rugged and red-blooded heroes and heroines, who, all winter long, no matter what temperature, indulge in their accustomed romp and swim in the icy waters, are somewhat more generously endowed with splendid hearts and blood vessels than they are with good ripe judgment or a knowledge of physiology.

While it is true that the human body can accustom itself to almost incredible extremes of temperature, and can withstand shocks of cold or exposures to blasts that no other living animal could or would tolerate, it does not follow that it is always best to put the resisting and recuperative power of the body to this maximum strain.

First, because of the direct effect of over-work upon a heart required to lift its column

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of blood so much more frequently each minute, and because of the inevitable tendency of such a heart to become abnormally developed. This abnormal development, as the mortality statistics show, inevitably reduces the longevity of athletes — making the splendid, bronzed giants about the poorest risk the insurance companies are called upon to deal with.

Indeed, there is a movement now on foot to discriminate against all who have, in their youth, or young middle-age, subjected themselves to the excesses and physical debaucheries of competitive games, or of these “polar bear” or “snow bird” grotesqueries.

Another reason against swimming among the ice floes and cavorting over snow-covered sands is that there is only a limited amount of energy generated in the human dynamo as the result of “converting” a certain number of calories of food in the presence of a definite amount of oxygen.

If a considerable part of this energy is used to keep the bodies of the “polar bears” from freezing stiff during their “medicine ball” stunts, or blizzard surf baths, there must necessarily be so much less energy left to be used in mental activities or other constructive work.

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So it would seem to be a sensible procedure to confine one's bathing activities to the summer season, or to a warmed bathroom. And, also, unless the reaction is very good, to warm water — especially during that frigid spell when the thermometer lurks dangerously near the zero mark, and the wind is Borean in its intensity.

In order to get an all-the-year-around benefit from sea bathing, however, many resorts now make a specialty of giving hot sea baths — or rather baths of hot sea water. Many invalids, especially those suffering from rheumatism, general debility, anemia, nervous diseases, or other conditions in which the shock of the open sea bath would be injurious, are greatly benefited by these indoor warm sea baths.

These patients should, however, seek medical advice as to the temperature and duration of such baths. Otherwise, they may do much more harm than good. This holds particularly true with those suffering from any heart affection, in which the shock of temperature or exposure might prove disastrous.

For those whose constitutions do not react well to sea bathing a sponge bath in salt water, followed by a brisk rub with a coarse towel, is agreeable and stimulating.

Or the rubbing sheet may be employed. This consists in a bed sheet wrung out of salt water and wrapped about the "bather's" body, together with a judicious amount of vigorous massage — applied by an attendant.

This kneading, pinching and plucking of the muscles of the abdominal organs working over the saturated sheet all the while, leaves the invalid in a fine healthy glow. A coarse dry towel, manipulated this time by the bather himself, if he is physically equal to the task, will complete the good work.

It is not well, except for those in robust health, to indulge in a "plunge" while exhausted. For sea bathing demands more expenditure of physical energy than any other variety of bath, especially if it be merely incidental to a vigorous "swim." Consequently, this might be piling the Ossa of additional exertion upon the Pelion of excessive fatigue, the after results of which are invariably depressing.

On the other hand, a vigorous, full-blooded individual, entering the water for a short swim — or better still, a long "float" — while fatigued, will come out greatly refreshed and strengthened.

None, excepting those with vigorous health and most elastic arteries, should attempt to



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enter the water while perspiring profusely. And these never in any way except by diving in — head first — the only proper way for a swimmer to enter the water.

For the cold water, coming in contact with the cerebral blood vessels, drives their blood down into the big arteries of the abdominal cavity, where, unless there is a meal in the stomach — which no sensible bather should be guilty of — it can do no harm. Those who do not swim, and who cannot enter the water by diving into it, should, before going into the water, first wet their heads by splashing the cold water over them.

Otherwise the blood is driven from the extremities and from the body toward the head. The vessels of the brain and its coverings become distended by the blood driven into them, and if there is any hardening or lack of elasticity in these vessels a rupture of some weak spot may occur, bringing about an attack of apoplexy or cerebral hemorrhage.

It is well for those who do not react vigorously to a cold bath to take their plunge when the sun is shining, and then they are less liable to “clamminess” and chill than they would be if the sun was obscured, or if they waited until the shades of eve were falling fast for their “dip.”

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Ten or fifteen minutes is long enough for most people to remain in the water — although this is entirely a matter of idiosyncrasy and circulation. Some individuals may swim for hours in water not too excessively cold, while others might develop livid complexions, blue lips, and a tooth-chattering like unto a set of castanets within a very few minutes.

These symptoms, in fact, should be a general guide, and none should remain in the water after their lips and finger nails become discolored or after their faces become leaden-hued. Indeed, it would be much more sensible and would show a more reverent regard for one's physical state of being if the bather parted company — however reluctantly — with his bath before, and not after, these symptoms manifested themselves.

There is neither honor, glory, physical benefit, nor common sense in remaining in the cold water longer than is pleasurable and comfortable. To “stick it out,” with chattering teeth and a blue nose, under the impression that because courage and persistence is required, therefore the sea bath must ultimately be strengthening, is the height of folly, especially for invalids and nervous or anemic people.

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The strong and robust will find a tonic benefit and a permanent advantage in a "swim" that will leave a weak, under-vitalized individual gasping like a fish. For this may put a disastrous strain upon his weakened heart, kidneys or blood vessels.

In fact, one of the greatest evils of sea bathing is the tendency to overdo on the part of those who go to the "shore" for the benefit of their health — and this means the majority of us. It is a great temptation — especially when the sun is bright overhead, and the sands are genial and warmly inviting — for those who possibly may have been building up for many months by means of tonics, rest and freedom from care, to do what the red-blooded young college chaps, for instance, are doing. But an over-stay of even a few minutes in the 55 or 60 degree water may undo the careful work of months, and the nervousness, insomnia, or the physical debility may, as a result of this foolish attempt to "be in the swim," be made infinitely worse.

Children should be initiated into sea bathing with caution — at least until the manner of their reaction to the bath can be determined by watching closely for signs of depressed circulation.

It should be needless to add — but unfortunately it isn't — that children should never be taken forcibly into the sea if they show a dread of the water. To drag them, screaming and protesting, and plunge them into the water, is nothing short of criminal idiocy — if there is such a thing. A life-long fear, or even horror, of the water may be thus engendered, which will handicap the youngster for life, for he will never develop the confidence so necessary before one can become a swimmer. Indeed, only rarely does a child in whom this fear is implanted ever cultivate the ability to care for himself in the water. And some time he may pay with his life for this lack of ability to swim.

The nervous system may suffer a shock that is irremediable from forcing a youngster into the terror of immersion. Epilepsy, convulsions, and even death have been produced by this asinine plunging into an element which the child has not yet had time and opportunity to make friends with. Also the researches of the psychanalysts of the school of Freud demonstrate conclusively that many chronic and hitherto incurable nervous conditions, even in grown men and women, result from a shock sustained during childhood. This fright is registered ineffaceably

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upon the subconscious mind, and while apparently forgotten by the objective, or waking mind, it acts in an insidious manner to disturb the balance of the nervous system. So whatever you may or may not do to yourself, don't frighten a child, and develop in him a craven fear of the water.

Sea bathing should be avoided by the aged, by the very young or by feeble children, by all those who lack vitality to develop the proper reaction, by women advanced in pregnancy, and by nursing mothers.

It may also prove most dangerous — not to say disastrous — for those suffering from tuberculosis with hemorrhage of the lungs, from apoplectic conditions and from heart complications. It may also produce disagreeable effects in those who have gout and rheumatism, diseases associated with extreme sensitiveness of the skin, or certain morbid conditions of the blood.

The "shore" furnishes still another health-quickener, however, apart from the salt water which it borders. This elixir vitæ is found in sea air.

We are all familiar with the drowsiness likely to follow on driving or walking in the mud. This is due to the reaction of the skin, and to the increased activity of the circulation

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of the blood in the surface vessels — just as sleep is frequently induced by stimulating the circulation with a warm bath.

A similar effect is usually brought about by sea air, especially during the first days of exposure to it. There is, in many people, a constant but not oppressive sense of drowsiness, and the sleep at night is deep and refreshing. After bathing in the salt water, this pleasant languor is likely to be quite evident.

So, if it is possible to take a short “nap” after the dip in the surf, it will help amazingly to tranquillize the nervous system, and aid in the relief of nerve irritability and insomnia.

Artificial salt water baths, for home use, can be made by adding from four to nine pounds of bag salt or rock salt to thirty gallons of fresh water. Some of the same stimulating effects on the nerve centres and vital organs can be secured by paddling in this solution. But it is a poor substitute for the splash and slap of the surf, the rank, clear tang of the air that blows over the far reaches of tossing waves, and the health-giving, tonic effect of the summer sun on sandy beaches.

For as a life-lengthener and joy-giver no form of bathing can be compared with that taken in the private domain of Old Neptune himself.



## CHAPTER X

### *FOMENTATIONS, COLD COMPRESSES, AND WET PACKS*

WHEN heat is applied to the body it causes the expansion or dilation of the blood vessels under the surface on which the application is made. The vessels enlarge and lose, for the time being, their full power to contract. Thereby they become distended with more than their usual supply of blood.

The effect of cold is exactly the opposite. The vessels contract and force the blood from the surface, leaving the capillaries much less than their usual supply.

Now, in congestion and inflammation the circulation of blood is obstructed. The little veins and capillaries become surcharged and distended. Congestion or local inflammation results.

One of the most expeditious and effective ways for overcoming this congestion is to apply cold compresses — or cloths wrung out of cold water — which absorb the heat, and

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produce contraction of the blood vessels. This temporarily forces the blood out of the parts, and stimulates the elasticity of the walls of the capillaries, thereby overcoming the tendency towards distention or congestion.

Cold compresses are particularly valuable in the treatment of tonsilitis, sprains, bruises and most injuries, and any inflammatory condition of a local nature.

If the inflammatory process is deep seated, however, compresses, which dilate and distend the vessels — thereby inducing the blood to flow more freely to the surface — will not give best results, as they divert the excessive supply of blood from the diseased or injured structures. For this purpose a woollen cloth, large enough to cover the area to be fomented, should be folded in four thicknesses. It should then be rolled, held by the ends, and the middle of the roll dipped in boiling water. When saturated it should be wrung by the dry ends, so that it no longer drips. It should then be unrolled and held close over the part to be treated, until it is sufficiently cool to be bearable — but no cooler, — for the hotter the fomentation the better the effect. It is well always to cover these with a bandage of oiled silk or a dry

towel, as they will thereby retain their heat for a longer period of time.

If, however, the condition is accompanied by the formation of pus, as in peritonitis or appendicitis, hot applications are contra-indicated. For by dilating the vessels circulating through the parts they favor the passage of the pus into the circulation.

Cold compresses — or better still, ice-bags — kept constantly over the affected tissues, are more effective in these conditions. For, by the contraction of the blood vessels supplying the parts, the pus is more likely to be “walled off” and the process thereby kept from spreading.

In some conditions, particularly where there is venous stasis (stagnated blood in the veins) — as in “black eye” — alternate applications of heat and cold, by causing dilation and then contraction of the blood vessels, keep the circulation free, and help prevent discoloration.

When any part of the body is deprived of its proper quantity of blood, as follows after exposure, the application of heat to the parts tends to equalize the circulation and thereby warm the chilled surfaces.

It is well to remember also that cold applications, to be effective, must be frequently

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repeated. In fact, the influence of cold being to force the blood in upon the internal organs, the heart is thereby stimulated to increased activity in the effort to pump it back again to the surface. This "reaction" explains why a person of vigorous constitution will be warmer after a cold bath than after a warm one.

If these simple principles be remembered, there should be no doubt or question as to whether cold or hot applications are indicated in the various conditions most generally met in the emergencies of family life.

There is another way in which fomentations and compresses are employed which greatly aids the "local application" method. This is to stimulate the reflexes through treatment over the spine.

The effect upon internal organs and remote parts of the body of applications made over the various spinal areas is exactly the reverse of that made "direct." Therefore a "direct" application, plus a spinal stimulation, would theoretically double the efficacy of the method.

For instance, the application of heat to the feet dilates the capillaries, and thereby warms them. The same dilating effect on the pedal capillaries is secured by applying cold to the lower part of the spine.

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A cold sitz bath or an ice-water vaginal douche will stop uterine hemorrhage. Hot applications to the middle of the spine tend to this same result.

Cold compresses applied over the chest will relieve inflammatory conditions in the lungs or in the pleura. But hot compresses to the spine, between the shoulders, will sometimes give even more speedy results.

This action is exerted through the sympathetic system — so-called because through it a sympathy between the different organs of the body is produced — which is “connected up” with the spinal column by the thirty-one pairs of nerves which branch from the spinal centres. These are distributed to all the organs “below the chin.”

Hot applications to the ganglia or nerve plexus which send their telegraph lines to the various organs or parts contract the blood vessels of these parts — thereby reducing inflammation in these areas.

Applications of cold to the nerve ganglia of the spinal column have exactly the opposite effect, and will cause a dilation and distention of the blood vessels supplying organs or parts “reflexly” connected with the ganglia stimulated.

For example, a piece of ice rubbed between

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the shoulders will increase the flow of blood to the chest. It also warms the hands. If it be rubbed on the lower part of the spine it tends to relieve cold feet, uterine congestion, and many intestinal and bladder irritations. But this is too complex a subject to take up at this time.

Wet packs, consisting of a sheet wrung out of cold, cool or tepid water, into which the patient is rolled, and then covered with an ample supply of warm blankets, have a large use in sickness, for they are admirable pore-openers. In certain conditions these sheets may sometimes be quite covered with a glutinous deposit, composed of effete material which has been removed from the body via the skin route.

The value of this form of elimination in fevers — or in fact in any condition in which the secretion is limited or in which the function of the kidneys is impaired, — is almost incalculable.

In giving a wet pack a sheet, a thick woolen blanket, and one or two “comfortables” are required.

The “comfortables” are spread upon the bed and the blanket placed over them. Then a sheet, wrung out of cold, cool or tepid water, is spread upon the blanket. The



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patient, divested of all garments, then lies extended on the sheet, the upper end of which should cover the chin. Lifting his arms, one side of the sheet is drawn over the body, tucking it snugly under the arms and under the opposite side of the body.

Then the arms are dropped again. The other half of the sheet is drawn over to enfold the arms, and tucked in on its opposite side, particular attention being taken to wrap the neck and feet securely in the wet sheet. Then the blanket and comfortables should be tucked around in the same way.

This work should be done quickly, so that the patient will not be chilled.

Hot water bottles and a cold compress to the head are material aids to the pack, which should be used from ten minutes to two hours — or even longer. It is not necessary that sweating be profuse, but it is quite essential that the bather be thoroughly warm — after the first shock. Hot water or hot lemonade will help in this.

After the pack a sponge bath or an alcohol rub should be given, and the patient thoroughly dried.

The wet pack has a powerful sedative influence, as it allays excitement by soothing the nerves and lowering the pulse. It tends

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markedly to equalize the circulation and to remove poisonous products from the body. In short, the wet sheet pack is a full grown cold compress, and does, on a large scale, what the compress does for local conditions.

## CHAPTER XI

### *"HYDROTHERAPY"*

A KNOWLEDGE of hydrotherapy — or the water cure — is almost indispensable to all who wish to live long, and who wish to maintain their highest efficiency while doing so. The bath may not be the Fountain of Youth, for which Ponce de Leon sought so assiduously. But it comes closer to fulfilling the requirements than any other hygienic measure that has ever come to these banks and shoals of Time.

And it has the sanction and seal of approval of antiquity. For the employment of water in the cure of disease is as old as thinking man. In the Rig Veda, written about 1500 B.C., we are told that "water cures the fever's glow." Hippocrates extolled it highly. The ancients even "went in" for shower baths, the invention of which is credited to Asclepiades of Prusa, who was born 126 years before Christ, although Pliny ascribes its invention to Sergius Orata. Nearly all the ancient medical authorities wrote appreciatively of the use of

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water in medicine, and employed it extensively — although more or less empirically.

The first attempts at scientific hydrotherapy, however, were made at the beginning of the 18th century, by Johann Sigismund Hahn, in Silesia, although the first to use water in fevers, according to modern methods, was James Currie, an American merchant who became a physician in Liverpool. He employed it for its definite effect upon the pulse and temperature.

Afterwards, with the thoroughness characteristic of the Germans, Phéniger, Runge, Winternitz, Brandt, and other physicians put hydriatics on a scientific basis — although the German priest, Sebastian Kniepp (1822–1897), possibly did more than all the rest in popularizing the “water cure.”

So an understanding of the physiological effects of water, used under varying degrees of temperature and pressure, and for different periods of time, is now based upon a fairly accurate classification, and a large experience.

In order, however, to make strictly scientific use of this knowledge — to employ it intelligently in the cure of disease — one must be thoroughly familiar with physiology and anatomy — especially the anatomy of

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the surface nerves and blood vessels. For the 15 to 18 square feet of skin that enclose us is a very responsive and sympathetic organ, most intimately connected with the central nervous system through the millions of nerve terminals.

The skilled hydriatist relies principally upon the stimulation or sedation of these areas for his best effects, although my own best judgment is that this reliance upon "reflex" effects is largely pure buncombe. For, even though the palms of the hands are reflexly connected with the mucous membrane of the nose, and also the brain; and though the lower third of the breast bone influences the kidneys; of what use is all this when we can do at least equally well, if not better, by treating nose or brain or kidneys by the proper compresses, douches, sitz baths, or what not?

However, most of the methods employed in hydriatic institutes are rational. This is particularly true of their employment of different forms of douches. These comprise the Charcot, Scotch, Fleury, Shower, Cataract, Jet, Circular, Fan, Spray, and other forms which gain their name from the direction, from the amount of pressure used, and from the temperature or its variance, and from the duration of exposure to this stream.

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The effects aimed at are mechanical and thermal. The sudden “blow” of the cool or cold water upon the skin forces a contraction of the coats of the surface blood vessels, which shock is transmitted by the nerves to the internal organs.

The gasp for breath, for instance, illustrates its effect upon the respiratory centres. The blood, thus driven from the surface, returns immediately, under the physiological impulse of “reaction,” described in another chapter.

This is the principle upon which the douche is employed — to stimulate the ebb and flow of the blood, and thereby bring about a healthier condition of the body. There is no doubt but that these baths, in properly selected cases, improve the appetite and digestion, deepen the respiration, stimulate the heart action, and act as tonics to a jaded or weakened nervous system.

And when anything has done this much it can cure almost as many diseases as a patent medicine is popularly supposed to cure — because it favorably influences the cause of almost every form of physical disorder, excepting infections or injuries.

A veritable course in skin gymnastics can be secured by alternating a cold spray or



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shower with the hot — using both to the limit of extreme bearability in temperature. This causes a contraction, followed by a dilation of the blood vessels supplying the skin, that amounts to what might be called a “massage of the circulation.” It promotes a splendid reaction, and is of immense value in most conditions of sub-vitality.

The sitz or hip bath is in great favor in most hydropathic institutions, although equally good results follow sitting in the regular bath tub, which differs from the sitz tub only in that the feet stick in instead of out of the tub.

The temperature of this bath should be from 105 degrees to as hot as can be borne. This bath is especially valuable in treating inflammations of the pelvic organs, hemorrhoids, itching, or for relaxing the sphincter muscle of the bladder in retention of urine. Ordinarily the sitz bath should consume ten or fifteen minutes. But in retention of urine it may be protracted until the desired result is obtained.

The cold sitz bath is employed to stop hemorrhage from the uterus or other pelvic organs. The temperature of this bath should be between 55 and 70 degrees, and may be continued for from two to fifteen minutes. It

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is best to have the bath cold and short, as otherwise a certain degree of toleration is developed, and the results are not so satisfactory. It is also well to give the cold sitz in a wash tub, so that the feet may be placed in hot water while the hips are immersed in the cold water.

If you have any doubt as to whether a cold or a hot sitz is the better for you it might be wise to refer the matter to a physician. For much harm may result from the injudicious use of a cold hip bath — unless the condition specifically calls for one.

In fact, hydrotherapy, like anything else that is really worth while, is a two-edged sword, capable of cutting both ways. And to employ it with success, one must not only know the kind of tool he is employing, but also must understand why he is using it. Otherwise his last estate may be worse than his first.

## CHAPTER XII

### *SUNSTROKE. ICY TUBS AND HEAT- PROSTRATION*

**W**ATER is the most efficient and dependable agent ever discovered for regulating the temperature of the body. Tepid, cool, cold, or congealed water will rapidly reduce this temperature, if it is too high, while warm or hot water will raise it, if too low.

Water taken into the mouth and stomach, injected into the rectum, or poured over the surface of the body, weight for weight, is the most effective cooling agent that can be applied. This is due partly to the fact that it requires much heat to heat water, and much cold to cool it. Which distinguishes water from many other fluids or substances that are much more readily influenced by variations of temperature.

Now, the natural temperature of the healthy body — in winter as well as in summer — is approximately ninety-eight degrees. If, from any cause, this temperature rises above 107

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degrees, the result is usually fatal. If, on the contrary, the temperature falls below 91.5 or at lowest 91, the condition is equally fatal. Now, there is hardly anything that afflicts humanity that swings the temperature pendulum to higher or — paradoxical as it may seem — to lower extremes, than does heat. And there is no single class of conditions that is so serious and relatively common as are the effects of heat. And also there is no remedy so effectual as water in the treatment of these conditions.

Therefore, no book on bathing could be complete which omitted reference to the life-saving qualities of water in dealing with the effects of heat — or heat-stroke.

The distinction, however, between sunstroke and heat-prostration must be emphasized if the treatment is to be of value. For the identical method that will cure one form, — sunstroke, will kill the other form, — heat-prostration.

For these depressions of the vital powers which result from exposure to excessive heat, while produced by the same cause, are totally unlike in their effects.

In heat-prostration, which is the variety of heat-stroke most usually met, there is a more or less rapid development of weakness and

prostration. The surface of the body feels cool and clammy, the voice is weak and "far away," the pulse is feeble and usually quite rapid, the breathing is hurried, and the vision is dim and indistinct. Roaring or buzzing noises are frequently heard, painful muscular spasms are usually in evidence, and there is partial or total unconsciousness.

In some cases the attack is sudden, being ushered in by convulsions or tremors. Almost invariably — and this is one of the quickest and surest means, aside from the thermometer, of distinguishing between heat-prostration and sunstroke — the features are shrunken and drawn.

Heat-prostration calls for stimulants and heat. Hot compresses, applied over the epigastric region — the pit of the stomach — hot water, in rubber bottles, applied to the feet, and tucked in around the sides, and hot drinks, with strychnine, quinine, digitalis or other stimulants, give the best results.

Exactly the opposite line of treatment is indicated for sunstroke, which develops, sometimes with lightning suddenness, by an attack of convulsions or paralysis.

In this form of heat-stroke the skin is flushed and hot — directly the reverse of what it is in heat-prostration — the mucous

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membranes of the eyes are injected, and the eyes present a bloodshot appearance. The breathing may be either shallow and extremely rapid, or deep, labored, and sometimes snoring or stertorous in character.

The temperature, taken under the arm pit, ranges from 105 to as high as 110 degrees, and the action of the glandular system is completely suppressed.

While in heat-prostration the tendency is towards recovery, in sunstroke the tendency, unless immediate and radical treatment be instituted, is towards a fatal end.

This is why it is so necessary to be able to differentiate between these conditions almost at a glance — and accurately. Because, by the time a physician can be summoned, or the patient removed to a hospital, the life-saving minutes may have been lost.

Sunstroke calls for ice applications, and the quicker and more effectively these can be employed, the better the chances for the victim's recovery. The best method of applying ice is in a tub.

The patient should be stripped and placed immediately in a bath tub, into which is put all the ice necessary to produce ice-water. Ice-water should be poured over his head and over the big blood vessels of the neck, or a



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large piece of ice may be rubbed over the head and neck. For the extraordinary temperature must be reduced, no matter how cruel-seeming the process of its reduction.

After the physician arrives he will administer morphine, if necessary to control any tendency towards restlessness or convulsions, or meet any symptoms of depression by hypodermics of strychnine, or by whatever other remedy may be indicated.

If an ice tub is not available, the next best thing is to rub the patient's body with "chunks" of ice, at the same time pouring cold water over him, especially upon the head. Or the ice massage of the head and neck, before described, may be resorted to.

Rectal injections of ice-water — retained as long as possible, by administering them while the patient is lying on his right side — are an excellent help in temperature reduction.

If sunstroke should occur in camp, or in some place remote from a bath tub and a large cake of ice, the sufferer should be stretched on a camp-cot in the shade, and wrapped in a sheet wrung out of cold water. The coldest water obtainable should then be poured over him, and the effusion continued until the temperature subsides.

It is necessary in these cases to watch closely

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for any recurrence of the rise in temperature, and immediately repeat the cooling treatment.

If these measures are instituted early enough they promise not only a successful outcome, but also fortify the patient greatly against the almost invariable tendency to succumb to subsequent exposures to heat — that vulnerability which may last for years, or even for life — and which is the bane of these conditions.

But quick judgment, and the radical use of nature's therapeutic fluid, will usually neutralize the disastrous consequences of sun, humidity, stifling, crowding, or the blasts that course through the sun-soaked bricks and over the torrid pavements of summer streets.

## CHAPTER XIII

### *TURKISH AND RUSSIAN OPERATIONS*

A CERTAIN good bishop, in discussing the genealogy of Erasmus, said "What matter when or where or of whom he was born, since he should never have been born at all."

We are in a somewhat similar condition respecting the vices and virtues of Turkish and Russian baths. For notwithstanding their popularity and the great esteem in which millions regard them, "they should never have been born at all." We would have been much better off had the Turks and Russians kept our share of these baths — as well as their own.

While these sweat baths have certain advantages — for instance as emergency measures, in congestions, in rheumatism, or in various blood impurities — they are nevertheless a poor makeshift for Nature's method of producing perspiration. And while they effectively flush the tiny sweat glands, yet they do so many other things at the same time that their benefit is largely neutralized. In this

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they resemble good sweat-producing exercise about as closely as the concatenations of a Chinese orchestra resemble music.

Sweat baths constitute a lazy way of getting out of the system, in one fell swoop, material which should be gotten rid of in daily skin- and circulation-stimulating exercises. In fact, they are used openly and without shame as substitutes for exercise, and as means for dispensing with an intelligent regulation of the diet in fat reduction.

The Turkish variety is also highly recommended by the bibulous as a "soberer," it being held as an article of faith by those addicted to excessive drinking, that "a night in the bath is worth three in the bed." In other words, the alcoholic elite believe — and repeated experience seems to prove it ever more conclusively for them — that the Turkish bath banishes "booze," and also the disabling and paralyzing effects of this pretty poison.

Which is no argument in favor of the general use of Turkish baths — unless the sanctioning of a vice or an obsession be called an argument. If a Turkish bath enables an alcoholic to recover more rapidly from the effects of a debauch — which it does — it has to this extent a medical value. But so

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for similar reasons has strychnin or ether. Yet we do not extol these drugs for universal consumption.

The Turkish bath undoubtedly aids also in "breaking up" a beginning cold. Yet, in the very nature of things, there are probably quite as many colds "caught" in Turkish baths as are left there. For the hot, moist air, the abominable ventilation, and the absence of sunlight render the bath an admirable and unexcelled culture laboratory for germs — which we know cause by far the greater majority of our "colds."

Indeed, there is hardly a more effective known means for "catching cold" than to spend some time — especially if debilitated and weakened in resisting power — in the company of one or more men who came to the bath to get rid of theirs. For the "bugs" they bring in may leave with almost any one who happens to be in their company, under the debilitating, enervating, and insanitary conditions which infest these places.

Of course, if one caught in the treadmill of the economic grind cannot secure the time or opportunity to perspire normally, a Turkish or a Russian bath is better than nothing. But until a man loses his legs, or is completely "tied up" with the red tape of burdensome

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duties — which is also a species of crime — he should take his sweat *au naturel* — earned as a result of labor well performed.

One of the most frequent consequences of the Turkish and Russian baths is their depressive effect upon the heart. By arbitrarily increasing the pulse rate and the blood tension they throw an extra strain upon the heart muscle, and if there is any irregularity or abnormality in this organ this excessive work may cause it permanent damage. One who has any tendency toward “heart disease,” or who suffers from any form of valvular trouble or heart weakness, would do well to avoid Turkish or Russian baths as he would a cross-country run.

However, as Lincoln said of a similar proposition “For people who like that sort of thing, that sort of thing would be just about what these people would like.” So we might as well dignify them with a little description anyway.

The first Turkish bath was originally Roman. The Romans held this form of bathing in such admiration that they inlaid the floors and ceilings of some of the most luxurious of their baths with silver and gold.

However, after ascetic Christianity, with its abhorrence of water for cleansing purposes



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made its appearance, baths were banned. So the Mahomedans perpetuated and handed down the old Roman sweat baths and gave them their name.

This Roman-Turkish method of bathing was introduced into France, England, Germany and other European countries about the middle of the last century — or a little earlier. The first institution constructed in this country was in 1865, in New York.

The general arrangement for these baths usually comprises four departments, besides the dressing and sleeping apartments. The mode of attack is usually planned somewhat after this fashion:

Leaving clothes and hope behind, and armed only with a “cummerbund” or a towel which he ties about his person as a shield, the bather enters the “Tepidarium” or tepid room, the temperature of which varies from 100 to 120 degrees, depending upon the policy and plan of campaign of the establishment. After thoroughly bathing his head and face with cool water he sits or reclines on a chair or couch until a slight perspiration has been induced. During this time he drinks numerous glasses of water, and possibly wraps a wet towel about his head.

When the sweating is well started he is

promoted into the "Sudatorium" or hot room, the temperature of which ranges from 140 to 180 degrees. Here he remains until the sweat is streaming from every pore, after which he enters the "Lavatorium" or shampooing room.

He is now stretched on a marble slab, which usually feels and is most uncomfortably clammy and chilly, and is soaped, scrubbed, scraped, kneaded and massaged, until he is clean and limber.

Then he is thoroughly douched off, given a cool shower, and has a plunge in a cold pool — if he can stand it — or else an alcohol rub and a thorough drying with coarse towels.

In some establishments he then remains for an hour or more, until the circulation is equalized, after which he dons his habiliments and goes his way rejoicing — more or less. But in most Turkish baths the bather remains over night — sleeping in the place.

The Russian bath envelops the bather in an atmosphere of steam. The chapter on "Primitive Bathing Customs" describes very accurately the method pursued by most Russian bath establishments — even the most modern. This bath is, if anything, more oppressive and depressing than its Turkish brother, as any one who has breathed steam very long will admit.

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In fact, the majority of medical men look upon the Turkish and Russian baths as a sort of mechanical stimulus to physiological function — like a dose of jalap — and to be used only as one would employ a drastic cathartic. As a temporary relief for skin and sweat gland constipation they are splendid. As a weekly or fortnightly habit they are abominable.

And the time may come, in some awakened era of national health conservation, when a man or woman will have to present a physician's prescription to the medical policeman on guard at the doors of these establishments before being permitted to enter. Just as they now must present a prescription at the druggists before they are permitted to buy Dover powders for a similar purpose. Some statesman in 1965 may yet earn a public monument for putting this idea into law form.

## CHAPTER XIV

### *"SPAS," "BADS," AND MINERAL SPRINGS*

A PART from the elusive and seductive influence of the nymphs, spirits, kelpies and nixies that haunt all springs — except perhaps the more horrible-smelling ones — the chief charm of mineral springs lies in their beauty and bubble, and in the "All's right with the world" suggestion of their ebullience and saucy sparkle. But when all is said and done their principal therapeutic quality lies in their limpid wetness and in the fine fresh air found in their immediate vicinity.

They may possess some quality — imparted by emanations of radium, or as a consequence of their being thoroughly impregnated with iron, heavily charged with moonshine, or chock-full of whatever happens to be the most popular medical fad at the time — which gives them peculiar therapeutic properties.

But it is conservative to state that their marvelous uric acid solvent powers lie in the number of glasses of water drunk daily at the "Bads"; their anti-syphilitic effects revolve

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around the huge doses of mercury taken by stomach, fumigation and inunction during the "treatment"; their appetizing qualities upon the "vacation spirit" — the freedom from business and household perplexities; and their fine influences on nutritional processes upon the quantity and character of the exercise taken between baths and meals.

Possibly there may be some exceptions to this classification. I myself, for instance, have seen some remarkable results in rheumatism, and liver, kidney and stomach disorders which followed courses of treatment at Mt. Clemens, Mich. And these, after complete failure at Hot Springs and several famous European "Kures." I have never seen an adequate explanation of the "why" of this — unless it is "idiosyncrasy" — that subtle something we fly to when we don't know what else to say.

However, the Bath Habit is growing. The famous springs of this country are patronized by thousands who live the life of ascetics for three weeks each year in order that they may over-indulge themselves in food, frippery and folly the other forty-nine. And the hegira to the European "spas" and "bads" will begin as soon as the final cannon shot has ceased to reverberate through that war-ravaged land.

For chronic invalids, suffering from surfeit

and tortured by trifles, a three-weeks' rest, with no more brain-wearing tasks on hand than to remember their hours for the bath, the liver-stirring massage, the oft-repeated goblet, or the golf game, the Bath is a veritable life-saver.

It takes them out of the treadmill and puts them on a sofa pillow in the sunny window, where they can bask in house-cat activity, and “loaf and invite their souls.”

About 80% of these “chronics” would get well under any system of treatment that included a little restriction in diet and activity and a large increase in rest, fresh air and sleep.

But when we add to these desirable and health-giving measures the sluicing effects of innumerable glasses of water — drunk religiously as a medicine, something we can't, won't, or don't care to do at home — and the skin activity which follows the daily stews, steams, soaks and rubs, why shouldn't the bath benefit?

The change of air and scene, the quiet, monotonous surroundings, the early to bed and early to rise habits — generated by the fact that one can't stay up late and then get up early for that 6:30 A.M. goblet — are certain to cure a large proportion of invalids, many of whom are merely stuffed and satiated.



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After three weeks of this soaking and sluicing actual pounds of poisons and impurities will have been removed from the body.

But the mineral baths aren't to receive the only credit for this. For if one spent the same time in any clean-aired place, bathed with the same diligence and earnestness, drank as many glasses of water, ate as abstemiously, loafed as persistently, and went to bed as early as he does at these "health resorts" he would derive the same benefit as though he had made the pilgrimage to Baden Baden, Carlsbad, Virginia Hot Springs, or Aix-la-Chapelle.

And another thing. We may soak and stew ourselves until Mary's little lamb grows up to be a ram and dies of old age, but little or none of the minerals or salts contained in the bath water will soak through the pores of the skin and be taken up by the blood. So, notwithstanding the influence that acids, alkalis, sulphur, iron and "laxative" or "tonic" salts might have on the *outside* of the skin, their effect on the *inside* of the skin is only as potent as is moonshine on the growth of cucumbers. We can no more get a therapeutic amount of iron or magnesia into our systems through bath water than we can grow whiskers on a frog.

This, notwithstanding the oratund-sounding

science of balneotherapy, which treats of the chemical and therapeutic properties of mineral and medicinal waters, and clutters up our medical libraries. For the real virtue of water is in its wetness; in other words, in its solvent powers.

Water dissolves and washes out impurities, it liquifies dried particles of effete material and flushes them through the body sewers, and it enters into the blood and tissues and effects a combination with substances that should have been in solution long ago. So water on the outside doesn't put salt in the inside of a man.

But “how about the effects of mineral spring water when it is drunk?” says the mineral spring enthusiast.

Outside of the laxative waters — many of which are made chiefly by adding phosphate of soda, magnesia, or other salts to  $H_2O$  drawn from the spigot — ordinary tap water contains all, and sometimes more, chemicals and minerals than many of the most highly-lauded spring waters. The formidable-looking formula, printed on the mineral spring prospectus, is merely a duplicate of what would be printed if we analyzed the water from the kitchen sink or the back yard well. The only difference is that some mineral spring waters contain a third or even a half more of

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minerals than the tap water, with perhaps a pinch of bitter tasting sulphates, or salty iodides or bromides for good measure, but for nothing else. For in these infinitesimal proportions their therapeutic powers are only half of nil.

Some springs, however, contain less of these life-giving and health-increasing ingredients than does tap water. For instance, a certain aqueous gold mine, situated in Maine, contains five grains of earthy salts to the gallon — or one part in 10,000. Our own humble and familiar Croton water contains also five grains of the same life-saving salts, so highly extolled and deeply cherished in this expensive and exclusive Maine water; while the Schuylkill river contains four, and most reservoirs from twelve to thirty grains to the gallon. So one must have considerable high-tension imagination in order to derive therapeutic benefit from drinking most mineral waters.

And the bathing water is no more efficacious, from even an analysis standpoint, than are the spring waters. For instance, Hot Springs, Ark., known wherever the eagle waves its wings, carries exactly eight and a half grains of mineral matter to the gallon — about one-half as much as flows from most bathroom faucets of the world.

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Nor can the marvelous potency of the Hot Springs salts be credited with Hot Springs effectiveness. For four grains or more of the "mineral" is lime (or wall plaster), another quarter is silica (which is balmy sand). Indeed, the only medicine in the mixture consists in a grain of potassium and sodium phosphate. This is exactly one-sixtieth of a grain of laxative to a gallon.

But when these spring waters, or any other waters, are hot, and when the patient — suffering from rheumatism, lumbago, sciatica, and other painful afflictions — is soaked and kneaded long enough in them, the results are almost uniformly good. This would also be the case if he took the same number of baths, at the same temperature, and had a robust masseur give him the same vigorous pommeling at home in his own bathroom.

And whether the water is naturally or artificially heated matters not a jot.

"A heated water flowing to the bath-tub's brim

A heated water is to him —

And nothing more."

But if one believes — even though there may be "nothing in" baths or mineral springs — that surely there must be tremendous potency in mud, these fountains of life may readily be duplicated at home. Merely bring

up a couple of bushels of loam, and make a nice rich tub-full of hot mud, and take the mud bath in peace and comfort. But it won't do any more good than a protracted hot bath would do. For mud merely holds heat a little better than water does — that's all. The "medicated muds" of commerce owe their therapeutic influence to the glycerin, antiseptics, and anodynes they contain, and have nothing but their mud in common with mud baths. If it is contended that the bath ought to fizz and sparkle with carbonic acid gas bubbles, this also can be arranged at home. Get a little baking soda and vinegar and generate bubbles to suit your own esthetic idea of what a sparkling bath should be like. But don't imagine that the bubbling bath will cure anything — except imaginary conditions. And these will be cured by any form of hocus-pocus quite as readily as by carbonic acid bubbles.

In fact, the whole question of "spas," "bads" and mineral springs resolves itself into imagination — plus the beneficent and health-giving properties of plenty of water, internally and externally. Also fresh air, exercise, rest, limited diet, and natural law in the physical world.

## CHAPTER XV

### *PRIMITIVE BATHING CUSTOMS*

ONE of the oldest and most characteristic methods of bathing is that combination of Roman and Turkish bath indulged in by many primitive peoples. It is held in particular favor by the inhabitants of Northern Europe. In Finland, where it is quite universally practiced, it is taken in the "sauna," called "badstuga" in Swedish. This is usually a small log house, built very tight, so as to exclude all the fresh air possible. There are no windows, and only a single aperture in the roof, through which the smoke escapes. In the centre of the hut is an oven-like structure built of stones. A fire is kept burning under these stones until they are very hot.

The fire is then extinguished, and the women clean away the ashes and soot, the hole in the roof meanwhile having been closed.

A huge vessel filled with water is then brought into the hut by a couple of the husky devotees of the Goddess Hygeia. Into this tub a number of birch switches are placed to soak.



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Winter and summer these "badstugas" are a centre of attraction on "Laugadag" — or "washing day," as the old Norsemen, who were devoted to this form of bathing, called Saturday.

In these northern countries it is the time-honored custom for all the household — and, in some of the more remote and thinly populated sections, the entire neighborhood — to take a bath, put on fresh linen and clean clothes, and celebrate the end of another working week.

This congregate bath, understand, is indulged in only by friends and intimates. The stranger, or the passing traveler, does not share this ablutinal privilege with the people. He must flock by himself and be his own boss rubber, bath attendant, and valet. It is only when the people regard a visitor as practically one of themselves — and as an intimate token of appreciation — that he is invited to share in their bath.

Paul du Chaillu, the famous traveler and hunter, has given us an account of such a bath, which is a unique ethnological contribution.

In "The Land of the Midnight Sun" he tells us of his first bath taken with the family — and all the friends and immediate relatives of the family — including the neighbors.

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One Saturday afternoon he was invited by a couple of young friends of his to take a bath with them. The invitation was seconded by the girls, who were busily cleaning out the bath house, and by the rest of the company — among whom were the father and mother of a large family.

The weather was bitterly cold, the ground being covered with several inches of snow. The bath house, however, was within a stone's throw of the farm dwelling where the mighty lion hunter was stopping.

As the hour appointed for the bath arrived, he saw several young girls hurriedly making their way to the bath house. They were dressed in the skins that nature fitted them with when they came into the world — and nothing else. Chaillu did not wonder at their hurry — as the thermometer stood at twenty degrees below zero.

Soon after three elderly women came jogging from a neighboring farm. The eldest of these had an old skirt around her waist. The others were in *puris naturalibus*. Other young women followed, flitted through the badstuga door, which they did not neglect to close quickly after them.

Several aged men then appeared, followed by younger ones, and these by a number of

children of all sizes and ages. None had on any clothing whatever. These also joined the throng inside.

It looked to Chaillu as though the line were going to stretch out to the crack of doom, so, taking advantage of a little lull in the procession, he sprinted across the snow, and pushed hastily into the bath levee, where he was welcomed with a hearty shout of encouragement and approval.

The heat was so intense that he could scarcely breathe, and the sudden transition from an atmosphere of twenty degrees below to the suffocation point was almost overpowering.

As the novitiate's eyes became accustomed to the darkness of the place he began to recognize the faces of friends. There were many more than usual in attendance that day, for all the neighbors had come to "have a bath with Paulus."

Seating himself on the lower, and consequently the cooler of the two benches built against the walls of the badstuga, Chaillu proceeded to perspire.

At intervals some husky Myrmidon would pour water on the hot stones, raising a tremendous cloud of steam. Every one was sweating profusely.

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Now and then they would pour water over each other. This afforded a grateful sense of relief. Then, with the birch twigs, one's back and loins were switched until they smarted, the flagellation being administered by girls or men indiscriminately, and as a mere matter of routine. This was for the purpose of quickening the circulation, and bringing the blood to the surface.

In about a half hour, after a final and thorough switching and pouring of cold water over the body, the bathers departed for home — in the same charming condition of undress in which they came.

Chaillu contends that, on emerging from the hut, the sensation was delightful. Breathing in the cold air and experiencing its sharp sting on the bare body imparted an exhilarating feeling of vigor.

The traveler rolled himself in the snow, as did a number of the virile descendants of the Vikings, and then ran at top speed to the farm house, where he permitted himself to cool gradually before wiping away the dripping perspiration and resuming his clothes.

In many places, as if by tacit agreement, the men and women do not return together, and the older women wear some sort of loin covering during the promenade to and from

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the bath. They do not consider it dangerous to walk a short distance — even with the temperature down to thirty-two degrees below, which it frequently is — provided the perspiration is not suddenly and entirely checked.

These Northern Europeans are the only peasantry in Europe who take a bath every week, and they are phenomenally healthy. Of course their habits of indiscriminate congregate bathing can prevail only in districts remote from the dissolute practices which civilization unfortunately brings in its train.

From childhood these people have gone to the bath together, and their children are brought up in the same custom. Innocent of guile, they no more imagine harm in what they do while at the bath than they would in eating dinner together. “*Honi soit qui mal y pense*” — “Evil to him who evil thinks.”

Indeed, the custom of promiscuous bathing is a very ancient one in Europe, and prevailed extensively among our rugged and simple-minded forefathers. And statistics prove that there are no more moral races than those among whom, in natural simplicity, or animal artlessness, the custom of promiscuous bathing still exists.

## CHAPTER XVI

### *MUD AND MYSTERY BATHS*

**M**UD baths or moor baths are extensively used in some parts of Germany — and in other countries where they don't know any better. They are manufactured out of a picturesque quantity of swamp mud, or from some of the mineral spring mud that overruns these lands.

The compound of mud and water evolved by the experts in "badology" is thick and slab — like the gruel in the witches' caldron in *Macbeth*. Chemically the baths are a combination of all the ingredients — animal, vegetable and mineral — of all the substances of which the mud or moor earth is composed, plus a little  $H_2O$  — to give the chemicals proper consistency.

Much of the virtue of mud baths was supposed to develop from the formic acid — a volatile product formed by ants — with which the stuff was believed to be saturated. But since the discovery of radium and its alleged curative powers, many of the "bads" are now "radio-active" — more or less — usually less.



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Mud baths are usually administered piping hot. As the mud has a tendency to retain heat for some considerable time, the resulting antiphlogistic and pain-relieving action on a patient immersed to the neck in one of them is very satisfactory. It is quite probable, however, that the imagination and the expectation of relief also play an important part in the cure. For, if heat is the desirable thing, a more uniform and more diffuse quality of this commodity can be secured merely by lying in the bath tub, and turning on just enough hot water to maintain the heat at the bearable point.

However, these mud baths are held to be good for most of the things that affect us, especially for rheumatism and skin diseases. It is quite likely that poultices of mud, together with a rigid regulation of the diet, abstention from meat and alcohol, and the liberal flushing of the system with drinking water commendably practiced at bads, together with a glad free life in the open air, and much exercise, might have a most favorable influence upon the habitues of these resorts.

But just how much the mud has to do with any improvement is a debatable question. The chances are that its percentage of in-

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fluence would have to be figured in decimal fractions.

Yet it is old enough to know better. For, on the banks of the Nile, slime, which is mud before it becomes dignified, has been used from that time bordering on the farthest reaches of history as a bath for healing purposes, although it is probable that slime baths had also some ceremonial or purification significance — like bathing in the Ganges or the Jordan afterwards came to have.

In many countries sea mud is used instead of swamp moor or mineral spring mud, and for just as good — or bad — a reason. For the same awe-inspiring recital of “cures” follow bathing in one variety of mud that are associated with bathing in the other.

Pine baths have received high praise in many regions where pine trees are plentiful — particularly in the Black Forest and Hartz Mountains. A decoction is made by steeping a few armfuls of the fragrant tops of pine trees in boiling water. This decoction is added to the bath in varying quantities — prescribed by a serious-miened physician with the solemnity of a Priestess of Delphi — or as though the addition of this decoction really gave a therapeutic value to the bath.

Of course, the smell of the pine extract is

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undoubtedly delicious, and the resin which it contains, if snuffed into the nostrils, might have a beneficial effect upon catarrhal conditions. But when we've said this, we've said all that can be said for the "medicinal" effect of pine baths.

A fine old hoary-headed bath was the immersion, or the submersion, for it wouldn't do to leave any portion of the body unmedicated, in blood, milk or whey, as well as in various soups, broths or meat decoctions. These messes were administered to the weak and sickly, in the belief that they imparted strength. It goes without saying that there is not an iota of justification for this belief. In fact, a person could be immersed in one of these baths up to his ears, and if he didn't swallow any of the stuff he'd promptly and expeditiously starve to death.

The belief is on a par with that pleasing old-woman's conviction that wrapping a dying person in the skin of a freshly slaughtered bull gives him a chance to imbibe enough vital power from the bull to remain alive for a while. And, such is the influence of auto- and hetero-suggestion, that if the stricken one has sufficient faith, and there isn't anything serious the matter with him, he may recover. Remember that all these beliefs — like old

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folk-lore tales — must have *some* element of success in their cosmos, in order to endure as permanently as they have.

For instance, the savage who ate his enemy's heart, in the belief that thereby he acquired the strength and courage of his foe, really did acquire a portion of it. Some modicum of this strength he obtained from digesting the fresh meat. The rest he achieved because he believed he achieved it. "As a man thinketh in his heart so is he."

But to return to our baths. Sand baths are another of those divinely ordained blessings which are hallowed by antiquity. The undoubted benefit which follows this variety of bath is, however, not so much from the effect of the sand as from the therapeutic virtue of the sun.

Of course the sand holds the heat, and keeps the buried bather in a glowing state of perspiration, but, after all, it is the glorious old red-faced giver of universal life, and the heat and light rays that he shoots from his fiery quiver that help the deep tang of the ocean air to oxydize the poisons of rheumatism, and eliminate the toxins of fatigue.

These, and not the sand baths, are the things that tranquillize the harassed nerves, that purify the sluggish blood, that generate

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vitality in the anemic. Yet, whatever serves is good. So, if the sand bath makes the air and sun bath possible, vive le sand bath!

The same commendation applies to the seaweed baths, which are usually given under the impression that they generate ozone. The fine, rank perfume of bromine, iodine, potassium, and salt — which is the essence of the fragrance of sea-weed — may not contain much ozone. But if it be taken in the sun, and in the clean sea air, it will, in all probability, do quite as much good as though it did.

Not so commendable, however, is the filthy practice of bathing in, and smearing the body with dung, for the cure of all manner of ailments. This is practiced quite freely among some of the semi-civilized Europeans, and by many partly civilized Eastern nations.

Needless to say that the processes of fertilization and elimination have nothing in common. Dung is the antithesis of all that makes for health and cleanliness. To use it in a bath is proof of superstitious ignorance and child-mindedness.

Yet most primitive and uneducated peoples use various refuse matters as baths. For instance, in countries in which the grape is largely cultivated, the husks of the grapes are considered to be a most excellent bath mix-

ture, especially for those who suffer from skin eruptions or lumbago.

It may be pertinent here to remark that most eruptions are aggravated in the presence of an acid, and that grape skins have the same genial effect on lumbago that salt has in taking the curl out of a pig's tail.

It is quite likely that the practice of bathing in, or rather plastering oneself with the refuse of the olive — a favorite out-door sport in certain olive-growing lands — has some basis of justification. For olive oil inunctions, administered to infants, seem to improve their nutrition. But it is doubtful if a sufficient quantity of the oil could be absorbed by lying in the refuse of the olive mills to pay for the time and trouble consumed in accumulating this small quantity. Most of the workers in the oil-making establishments are sufficiently healthy and active to keep their pores open by exercise, and are morally qualified to take any reasonable quantity of olive oil into their systems through their stomachs. And two tablespoonfuls a day would give them all the nutritive effects that two weeks of lying around in the olive refuse would afford.

In fact, the most potent effect of any of these "mystery baths," as they might be termed, is in their influence over the imagina-



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tion. The greater the number of people who believe in them — particularly if their curative qualities happen to be a tale authorized by one's grandam — the more certain they are to heal the halt and bring surcease to the suffering.

They are, however, remnants of the days of the voodoo doctor and the medicine man. That they are still advocated by physicians is most likely a sign of mental incompleteness, and has nothing to do with cupidity.

For, as Antony remarked about the Romans, "they are all honorable men." Honorable, but sadly mistaken.

CHAPTER XVII  
*HOW AN AMERICAN DOCTOR GAVE  
SERBIA A BATH*

UNCLEANLINESS is frequently its own punishment. Filth meets its inevitable fate. Dirt digs its own grave. And occupies it — together with its victim.

We have long held this as a credo, but now Science has proven it absolutely.

For when the Austrians invaded Serbia in the fall of 1914 they left as prisoners in the hands of the Serbians 60,000 of their army. Sixty thousand ragged, filthy, vermin-covered soldiers, who hadn't had a bath in months.

The Serbians divided this white elephant into many sections, and sent these pieces all over the country, wherever railroads ran. A few weeks afterwards typhus fever broke out among the Austrian prisoners.

It raged with terrific virulence in the concentration camps, and soon spread through the length and breadth of the land, until in a few months, Serbia had 300,000 cases of typhus fever within her borders.

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Victims of the disease died by the thousand. At that time, in all Serbia, there were less than three hundred doctors, almost all of whom fell victims to typhus, as did also most of the small handful of nurses who remained. The country had no facilities for handling the terrible plague, since the dreadful battles — blood-orgies of almost daily occurrence — had filled the few hospitals to overflowing.

Serbia had thrice forced the Austrians back over its border, defeated and broken. Yet these same Austrians, through the prisoners left behind, had introduced into Serbia an enemy infinitely more destructive and more to be dreaded than forty-two centimeter guns, or serried battalions of infantry.

Within a few weeks typhus victims, conquerors and conquered, lay sick in the fields and streets, in dry-goods boxes, in doorways — and in every corner into which a death-marked human could crawl for shelter.

The disease, contagious and mortal as the fierce plagues that over-run Europe during the Age of Night, was spreading like a prairie fire over the stricken land.

It would have wiped the Serbian nation from the face of the earth, but for one thing. America stepped into the breach and saved it.

## GIVING SERBIA A BATH

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This is one of the most glorious annals in the history of American medicine, something of which every American should be proud. For the Red Cross Commission, with Doctor Richard P. Strong, one of the world's famous physicians, at its head, interposed itself between Serbia and annihilation, and stamped out the disease. By giving Serbia a bath America banished typhus. This sounds very simple, but it was, in reality, a gigantic undertaking.

Now, typhus is a disease to which little dignity attaches, inasmuch as it has only one cause — uncleanness. No person who takes reasonable care of his person, who is given to even occasional baths, and who keeps his physical tenement sanitary, can ever acquire typhus. For typhus is developed in only one way — by a parasitical organism introduced into the system through the bite of the body louse, — better known as the “gray back” or “soldier louse,” from the fact that the necessarily dirty habits and environment of soldiers invite its propagation.

Like malaria, to get rid of which it is necessary to get rid of the mosquitoes that cause it, typhus can be prevented only by getting rid of lice. And to get rid of lice it is necessary to get rid of dirt.

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Gold medals, epaulets, and glittering swords won't do this, for, under war conditions, commanding generals are quite as likely to be infested as are the humblest pawns in the cannon fodder brigades.

In a country like Serbia, in which running water, sewers and sanitation are practically unknown, typhus finds an ideal breeding ground. So, to make the Serbian peasantry louse-free and typhus-proof was a job, compared with which Hercules' small task of cleansing the Augean stables was a sinecure.

With those who were already attacked Doctor Strong and the Red Cross were not deeply concerned. Many became well because of their natural resistance to disease, and by reason of their hardy constitutions. The others died. So to check the spread of the plague to those not yet infected was the task to which The Commission addressed itself.

Theoretically this was easy, for typhus cannot exist except in the presence of the parasite which conveys it. It never visits the cleanly.

But the vast majority of Serbians, being by nature and necessity dirty, were eminently fit subjects for infection. Doctor Strong's job was to clean them. The entire country needed to be given a bath — something it

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probably never had had before. It was a giant's task. And Doctor Strong undertook it with a giant's determination and capacity.

He began his operations by dividing Serbia into fourteen sanitary districts, so planned that each district contained a railway centre. He distributed trains of three cars each through these fourteen districts.

One car of each of these trains contained facilities for hot baths. The next car was provided with shower baths. The third was a laundry on wheels.

Alongside of each bathing station were large tents, intended for the disrobing rooms of the villagers. Hours before the bath train was scheduled to arrive, an advance guard of sanitary officers, assisted by the local authorities, rounded up the population. All who could perambulate were assembled at the station. Thousands of these had not had their clothes off for months.

Among them were many Mahomedans, one of the tenets of whose religion it is that to disrobe in the presence of "infidels" is a crime against Allah. But, despite their protests, the Mahomedans were herded to the bath train with the others.

When the train arrived hundreds of naked men left the shelter of the tents, deposited



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their clothes in the rolling laundry, and entered the bath car. Here, under the watchful eyes of the overseers, they gave themselves a good satisfying scrub, after which they were passed into the next car for a shower.

Their ablutions completed, they were inspected by the doctors. Then they received a thorough sponging with petroleum — one of the best of insecticides. Cleaned and chastened they passed to the laundry car, where their clothing, thoroughly washed, disinfected and steam dried, was returned to them. In the evening, the women and children were given similar treatment.

After completing their labors in one district the anti-typhus corps would depart for fresh fields and pastures new. In the meantime sanitary squads fumigated all the houses and huts in each district and explained clearly the object of their labors, cautioning the populace, if they valued their lives, to continue the good work so nobly begun.

In August of 1914, four months after the arrival of Doctor Strong and his worthy minions, there were fewer than a dozen cases of typhus in Serbia; and not a single new case was reported in weeks.

The chances are that the epidemic is stamped out, although Doctor Strong's bath

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trains are tethered, watchfully waiting for any signs of its return.

And so, as General Gorgas drove tropical diseases from the Isthmus of Panama, and as Walter Reed banished yellow fever from Cuba, so Richard Strong has conquered typhus in Serbia — with hot water, soap, disinfectants, and a liberal admixture of American pluck and enterprise.

## CHAPTER XVIII

### *THE "INTERNAL BATH"*

THE "Internal Bath," which consists in daily irrigations of the lower bowel, is a splendid emergency measure, but, as a permanent relief, it is one of the most pernicious habits which could be formed.

If the colon is clogged with fecal matter, and the lower bowel is so atonic that it no longer responds to the natural irritation which distention with excrement produces, water injections, either with or without soap-suds or other lubricant, give a much needed and greatly appreciated relief.

If the peristaltic action of the bowels (the worm-like movement by which the muscles contract to expel their contents) is inhibited, the use of the internal bath is excellent.

For nothing can possibly be worse for the health than the consequences of constipation. No single thing is so potent a health-shatterer and life-curtailer as is toxic absorption of decomposing substances, generated in the intestine by retention and fermentation. For this poisoning has a more far-reaching in-

fluence on the mortality rate than any other ten causes combined.

But the cure for the condition is not to further irritate the lower bowel by filling it full of water every morning, and thereby getting it accustomed to the presence of foreign material. And, notwithstanding the claims of those interested in commercializing the implements of bowel irrigation, colonic flushing, or the passing of water above the sigmoid flexure — the abrupt bend where the lower bowel joins the transverse bowel — is almost impossible, except by skilled hands.

Also, the repeated distention of the lower bowel with large quantities of water — even though it does bring away the material accumulated in the refuse receptacle — has no permanent advantage.

On the contrary, forcing large quantities of fluid into the rectum tends to put the bowel muscles in a state in which they throw up both hands in disgust, and say "Well, if you know more about this job than we do, go ahead and do it your own way."

Injections beget the habit of more injections. They fail also to reach the seat of the trouble. This may be in the liver, in a sluggish gall bladder, or in an atonic small intestine. Or it may be by improper diet, or by insuffi-

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cient water drinking, or from a dozen or one other causes, any or all of which must be corrected or removed if permanent relief of the costive condition is to be secured.

Use the internal bath, if you must, when it is necessary, when for a couple of consecutive days the bowels have failed to move. (And they should never be permitted to go longer than this without action.)

But don't get into the habit of depending upon the "bath" to the exclusion of proper hygienic and dietetic measures. Don't substitute an injection for correct exercise of the abdominal muscles, or for the proper massage of the internal organs by correct breathing. Don't neglect the advice of a physician as to the choice of a laxative, and the proper amount of this to employ for the relief of the particular portion of your alimentary tube which may be at fault.

And don't forget that if nature had intended us to evacuate our bowels by enema she would have provided some sort of a reservoir of fluid on our left shoulder, together with a flexible tube and a hard nozzle. For thereby she would have still further covered herself with glory, and at the same time have fitted us properly for giving ourselves a daily "internal bath."

## CHAPTER XIX

### *THE CLEANEST PEOPLE IN THE WORLD*

**W**ILL the gentleman charged with bestowing the medal for the world's champion bather kindly hand it to the little brown brother from Japan? For he certainly has earned it, and is duly and truly entitled to it. And, if a gentleman is a man who takes a bath every day, there must be some "super" term to apply to one who apologizes for having taken only two baths, excusing himself on the ground that in summer he is so very busy. In winter he'll make up for it by taking four or five each day.

And not to be akin to godliness, not for ritual or ceremony, but just from an honest, praiseworthy desire to be clean.

This Japanese passion for bathing is a national heritage — a development brought about partly from living in a land that has a horde of volcanoes for heating plants, and partly from the fact that experience has taught them that health is to be gained by keeping the pores open, and the skin active



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and free from contaminating dirt. Also, the bath keeps the little brown people warm in winter — many, especially the children, bathing as often as four or five times a day for this purpose.

So, Japan has no "Great Unwashed." One may be hemmed in by the densest crowds on the sultriest summer day, or stand among toiling workmen whose few garments are saturated with perspiration, and never gasp with that disagreeable summer odor of humanity, which would be all too noticeable in almost any other country under the sun, under similar circumstances.

For the Japs make cleanliness of body the first of all virtues, and the daily bath the most indispensable of all duties. While New York waited until 1891 before supplying its poor with baths at a reasonable rate, Tokyo, the metropolis of Japan, has provided such opportunities as far back as the last syllable of recorded time.

Tokyo has today about eight hundred public baths, in which 300,000 persons, almost a fourth of the population, bathe every day, at a cost of about a cent of our money for each bath.

Besides this, every family, except the poorest, has its own private bathroom, or at least

its own bath tub. And they don't use this tub to store coal or soiled clothes in either — as do many of our unregenerates. They use their tubs for bathing purposes.

If one stops at the humblest village inn for a meal in Japan, the first course is always a hand and foot bath. And if one remains over night, hardly is a room assigned before a girl appears to conduct the guest to the bath — at the expense of “the house.” These brown brothers look in open-mouthed astonishment at a stranger who neglects to take at least one bath a day.

It has been charged against the Japs that they value the bath, not so much for its cleansing effect, as for the sensuous luxury of the practice. Even were this true, we might grant them absolution for it, inasmuch as it leaves them the cleanest people on earth.

But it is hardly true. For the aspect of their houses and streets demonstrate that they value cleanliness for its own sake. The Jap does not indulge in any halfway measures in his ablutions — such as a cold dip, or shower, or sponge. He gets right in a tub of water almost hot enough to scald a European, and he remains there for a considerable length of time.

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The bathing temperature adopted by the Japanese is usually about 130° Fahrenheit. Our very hot bath ranges from 104° to 110°. The head is usually bathed in hot water before the bath is entered, in order to dilate and relax the blood vessels feeding the brain, and prevent the cerebral anemia which might otherwise follow. If any palpitation of the heart is developed, or if any sense of oppression is experienced, they get out, and stand not on the order of their getting.

It is interesting to note the physical effects of such a bath. Usually the blood is driven out of the surface vessels, and a pallor ensues, which lasts but a few seconds before the reaction takes place, and the blood rushes once more to the surface. The pulse is first "slowed down," and afterwards accelerated. The respiration is not greatly affected, although the breathing is almost entirely from the chest — something about as follows with our cold water shock.

The temperature of the body rises to 104° or more — which effect is due to heat retention, combined with heat absorption. This rise in temperature occurs rapidly, usually within five or six minutes, returning to normal in less than half an hour after the bath. The

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arteries become relaxed, although the pulse is quite full.

Perspiration is quite profuse after leaving the bath. A cold douche is usually taken before concluding the ceremony.

It is commonly and erroneously believed that these baths predispose to colds, but such is not the case. A warm bath relaxes the surface blood vessels, and thus predisposes to colds. The hot bath, however, produces a temporary paralysis of the surface circulation, and prevents contraction of the capillaries after exposure to cold. This is proved by the fact that the Japs, in the interior towns, at any rate, run naked on the wintry streets after taking their hot baths, and rarely develop any ill effects from the practice.

Nor does such a bath effeminize them nor produce tenderness and debility. Contrariwise, it seems to tone and stimulate, and the sense of warmth is so enduring that the bath is reported as an economical method of keeping warm in winter in their inadequately heated dwellings.

One custom of the Japs which seems repugnant to Occidentals is the habit of promiscuous communal bathing, practiced among the lower classes in the interior towns. Yet,

though naked, there is no indecent exposure of the person. And they seem as oblivious to their nudity as so many splendid animals might be. It is the custom, practiced from time immemorial, and, in its working out, is really a tribute to their child-mindedness.

More to be condemned, perhaps, is their habit of indiscriminately bathing in the same water with a score or more of others. Yet even this may not be so reprehensible as it might appear at first glance. For they soap themselves and wash thoroughly before entering the great tubs or vats. And afterwards they rinse themselves with the bucket or two of cool water, dashed over them before leaving the bathing place.

While we could probably improve greatly upon certain Japanese methods, we still must admit that the frequent ablutions, and the thoroughness with which these are made is a most commendable national trait, and one which we might, with profit, emulate and universally adopt.

For there are two things much worse than bathing Japanese style, each one worse than the other. One is to bathe seldom. The other is to bathe not at all. So give credit when credit is due, and pin the medal on the

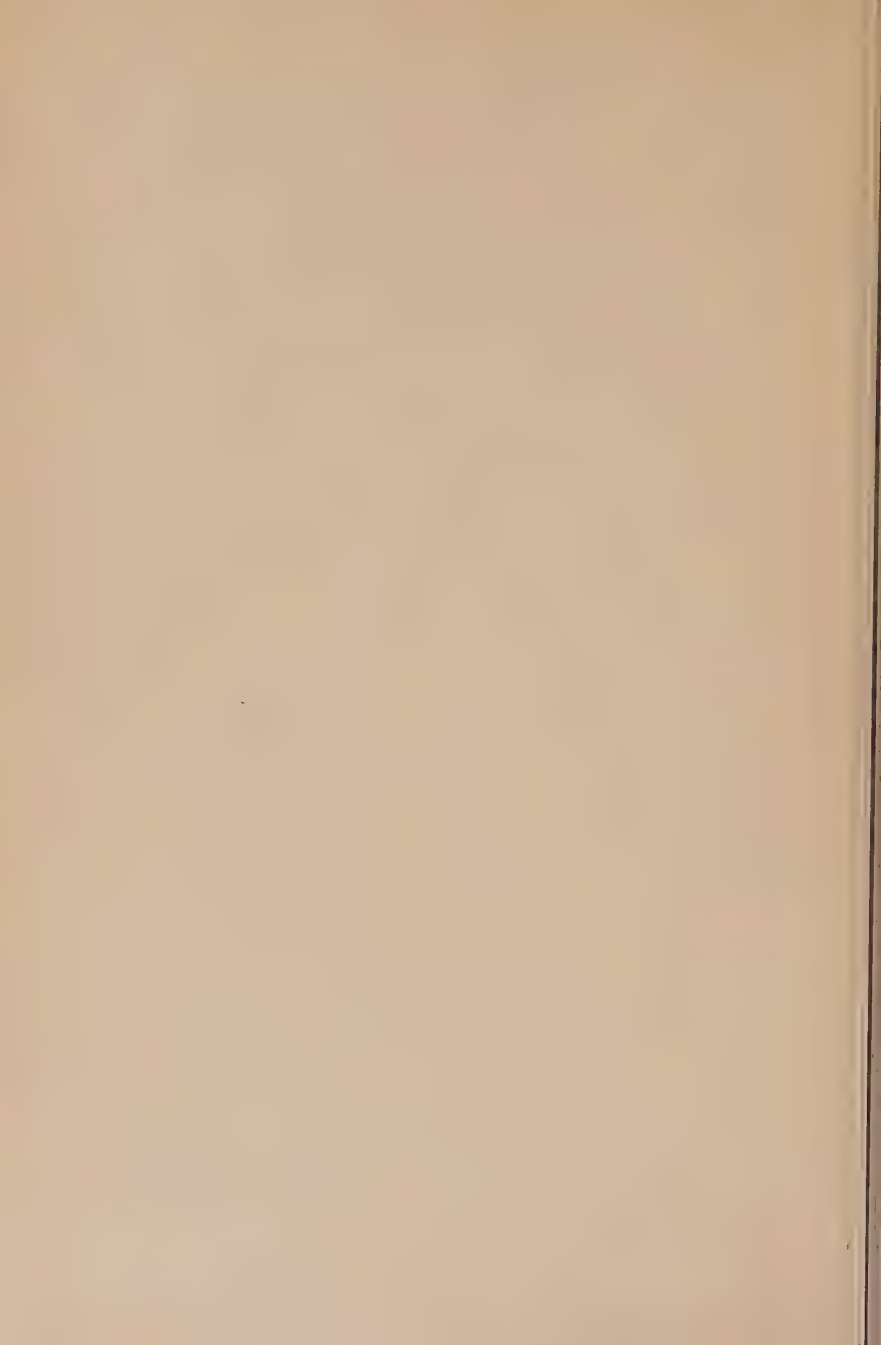
## CLEANEST PEOPLE IN THE WORLD

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blouse of the Jap — the world's champion bather.

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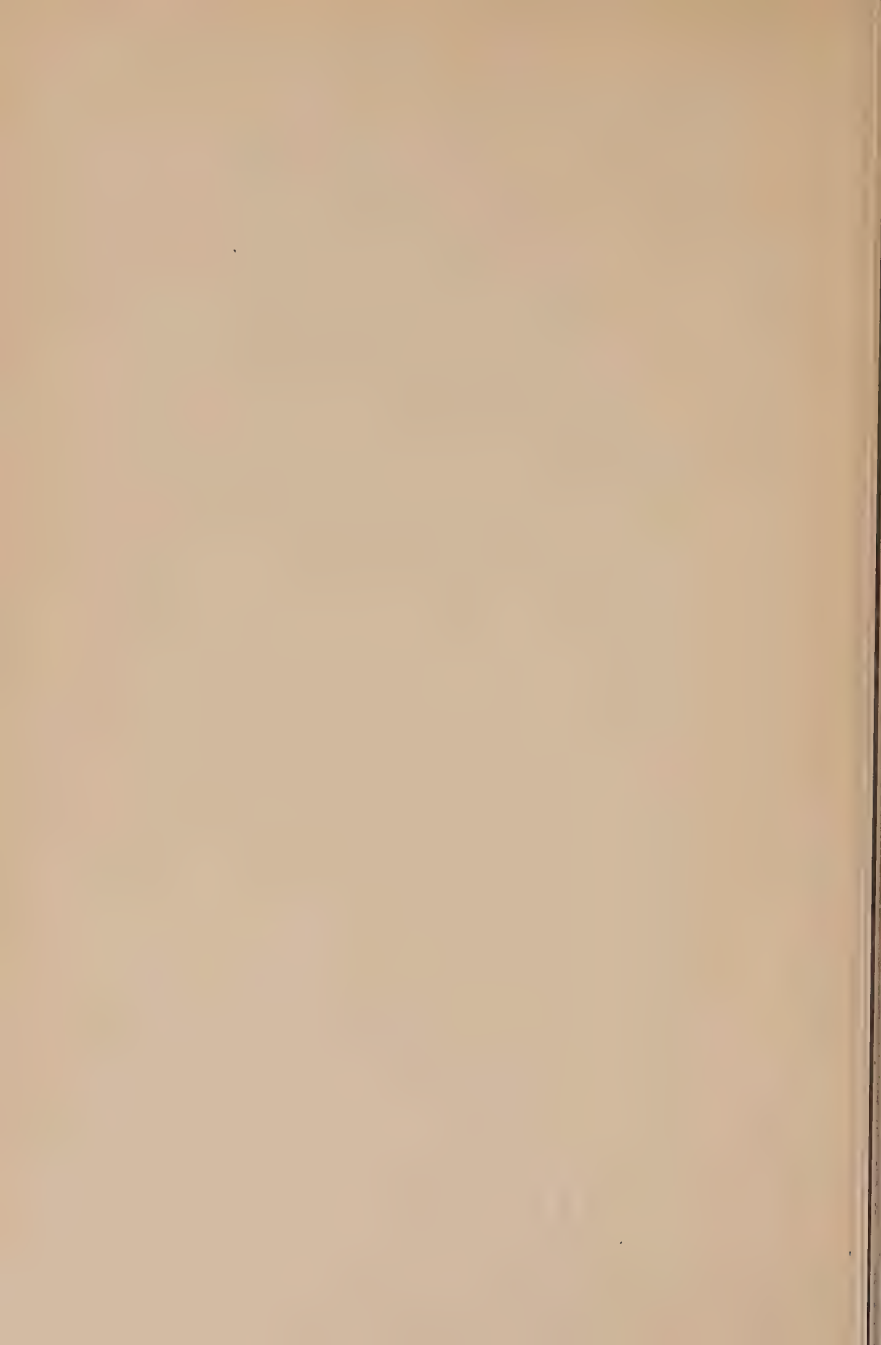
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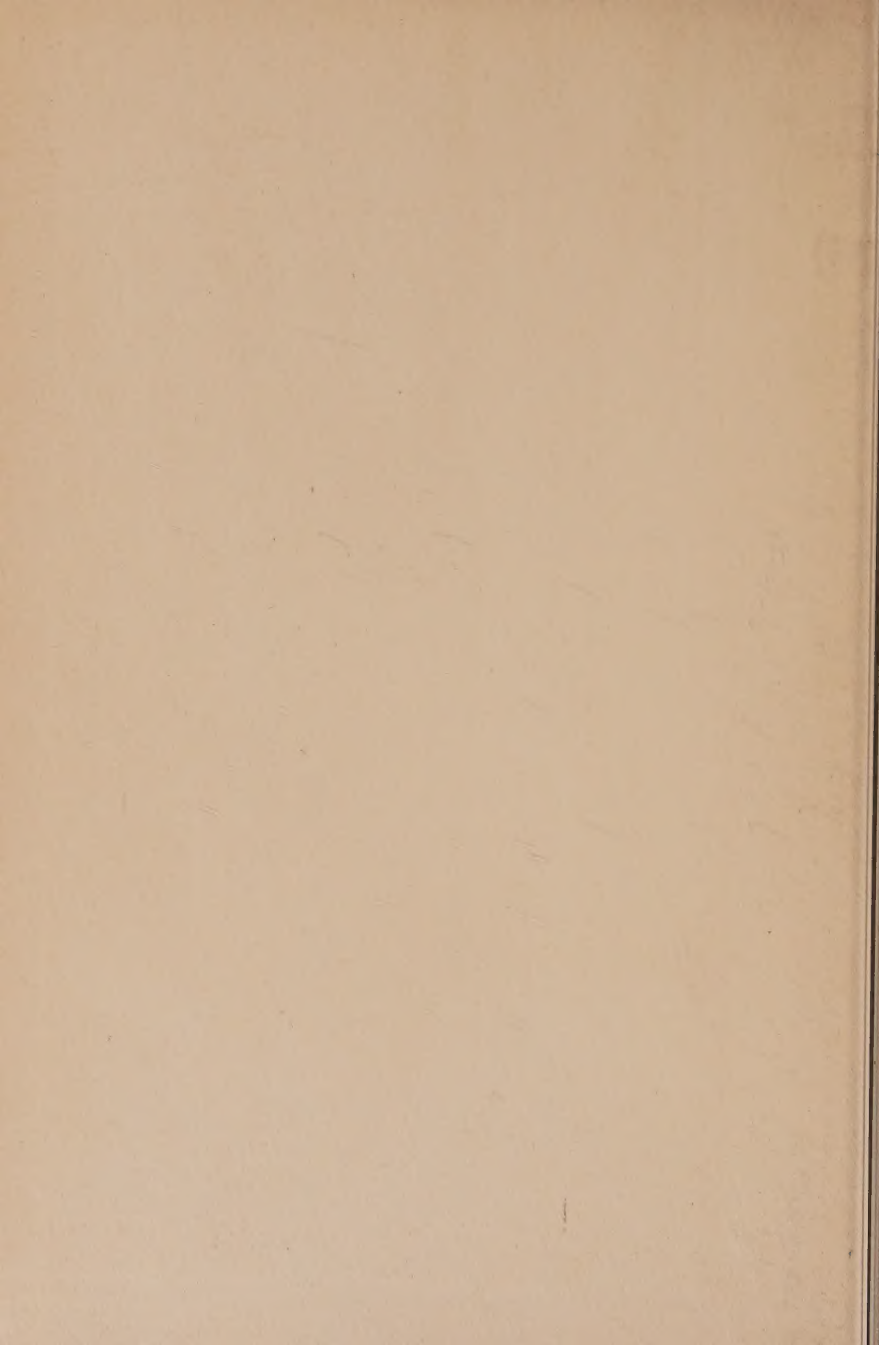
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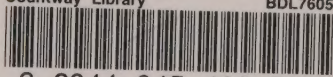


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